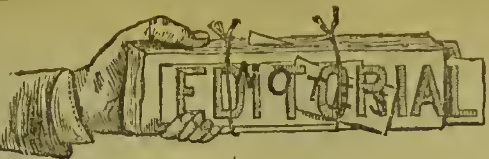

THE BALL.

THE Chemists' Ball, the gayest and most brilliant evening of the pharmaceutical year, is fixed for Wednesday next, the 22nd inst. By a printer's error the date was named as the 19th in our advertisement pages last month. We are happy to state that the Ball Committee has no such Sabbath-breaking tendencies. But the 22nd is really the correct date. Everything will be. as usual, on the best scale, and the occasion is one most admirably adapted for the promotion of social enjoyment and gaiety. The ball is no mere appendage of the Pharmaceutical Society, though it is always well patronised by gentlemen from Bloomsbury. It is the ball of the trade, and we shall be glad to record another handsome success.

COUNCIL BUSINESS.

At the meeting of the Pharmaceutical Council, a report was received from the Parliamentary Committee suggesting a rearrangement of the examination fees. The Preliminary to remain at £2 2s., the Minor to be £5 5s., the Major £3 3s. A smart notion for fostering education and augmenting the funds of the society at the same time. The Provincial Education Committee reported that their appeal for advice and suggestions from the world generally had been so abundantly responded to that they found themselves completely "fixed." They "did not feel able to recommend the adoption of any particular scheme" and action is therefore suspended until a more convenient season. A proposal by Mr. Urwick to invest £10,000 in freehold land, so as to obtain more than 3½ per cent. interest was negatived by twelve votes to three. Mr. Hampson once again asked for the bare justice of allowing ladies attending the lectures to compete for the certificates and prizes. It is a positive fact that nine gentlemen voted against this harmless proposal. We cannot resist publishing the division list:—For: Messrs. Baynes, Brown, Hampson, Schacht, Shaw, Sutton, and Urwick. Against: Messrs. Atherton, Betty, Bottle, Greenish, Haselden, Owen, Radley, Stoddart, and Williams. The motion was therefore lost. Mr. Hills was present but did not vote. It is still extremely doubtful whether the Council has power to refuse a lady student the right of competition.

TRADE INTERESTS.

We are looking forward with more than usual interest to the meeting of Parliament this year, and to the inquiry which we sincerely hope will result into the working of the Civil Service. The bitter enmity which some of its members have aroused from end to end of the country is not of a nature to be appeased by a jocular speech from Mr. Lowe nor by a flow of philosophical eloquence from the Prime Minister. We look to Parliament for the absolute prohibition of the Civil Service Co-operative Stores; nothing less will satisfy us. Co-operation may, or may not be a right and proper system; that is another question altogether; but Civil Service shop-keeping is a scandal and a crime, and its ringleaders are as much deserving of disgrace and punishment as the policemen, or gas stokers, whose only fault was that they aimed to benefit themselves by upsetting society. There is a general sort of impression among political quidunnes, that a dissolution of Parliament will occur this year. The idea is hardly founded on reason, but nevertheless, it is not improbable of realization. We mention it, that we may have another opportunity of urging tradesmen to combine in their own defence; that they may leave Church and State to take care of themselves for a session or two, and use every effort to elect men with sympathies for the British middle-classes. We are quite confident that this section of the community will win ultimately, but it is time they knew their power and used it.

While speaking of this we may mention that our report of the great tradesman's meeting at Willis's Rooms last month contained a serious inaccuracy in attributing to the Hon. Arthur Kinnaird a speech which was actually delivered by Mr. W. McArthur, the member for Lambeth. Mr. Kinnaird is heart and soul with us in the contest, but it is due to Mr McArthur that this correction should be made.

A well-contested argument has been carried on in our Correspondence columns as to whether the stores could not be struck effectively through the wholesale houses. Our own impression is, that vigilance and earnestness, on the part of wholesale firms, might put serious obstacles in the way of the stores, and we can only urge our friends in the retail to use their most forcible arguments to the wholesale houses. They are in possession of at least one piece of logic of a specially persuasive character.

IODINE.

"He has missed of joy," if we may quote from Tupper in this place, who has never interested himself in the romance of market reports. A pitched battle between the "bulls" and the "bears" of the Stock Exchange, lasting sometimes for days or even weeks, sometimes only for an hour or two, is one of the most exciting contests of wit, nerve, and daring which the world can produce. It is as far above mere common gambling as a man is above a machine; but to an extent a similar spirit and excitement pervades other markets besides that of money. In our Trade Report this month we record a veritable sensation on the chemical market, which signalised the opening of the year. Our readers are probably aware that there has existed for a long time a combination among the manufacturers of iodine, which, with a few brief intervals of disagreement, has been sacredly maintained. During 1872 they resolved to "bull" the price of their staple to an immense extent. Cost what it might buyers must have iodine, and therefore the manufacturers have had very literally a golden year. For some inscrutable reason they have fallen out among themselves, and the consequence was that on the 3rd of January the price of iodine dropped suddenly from 2s. 1d. to 9d. There has been no temptation to speculate in the article for some time past, so it is not likely that anyone has been severely "hit." But the possession of a very few kegs on that eventful day was a good reason for the owner to look blue and lose his appetite.

METEOROLOGY.

In the United States a very thorough system of meteorological observations has been elaborated by the War Department. Observations are taken simultaneously three times daily at all the stations of the army, and are forwarded to Washington, where bulletins are prepared and published. These give the barometrical and thermometrical readings, reports on winds and clouds, the rainfall, and the state of the weather. With each bulletin a map is published, which presents all this information symbolically. A synopsis accompanies the map, and the probable future state of the weather is forecast by the aid of the information thus obtained, and as far as present experience and scientific judgment will permit. The chief signal officer has had the politeness to forward to us specimens of these bulletins and maps.

THE BOSTON FIRE.

Our energetic agents in Boston, U.S., Messrs. James R. Nichols and Co., manufacturing chemists and proprietors of the *Boston Journal of Chemistry*, had their office and laboratory completely destroyed in the great fire on November 10th. They have removed to 34, Oliver-street, and their December number was published as usual. We find no shade of despondency in their editorial articles, and can only hope that success in the new year will be so abundant for them as to compensate for their severe loss in 1872.

A SECRET CONCLAVE.

We read in several of the French journals of pharmacy for December a paragraph somewhat to this effect:—

"A general congress of European pharmaceutists is to be held in London during the early days of January. The subjects of discussion are to be the international universal Pharmacopœia and the reports of the delegates appointed at the Paris Congress on the properties of the medicinal plants of the various Continental countries."

We make no pretence of knowing everything that goes on in London, but we fancy we should have heard of it if a European congress of pharmaceutists had been held here. Our inquiries have failed to elucidate the mysterious information.

THE SALE OF VERMIN KILLERS.

We must once more impress upon chemists and druggists the importance of registering the sales of all vermin killers containing strychnine, arsenic, or other poisons in the first part of Schedule A of the Pharmacy Act, and affixing to the packet a label "poison," with the seller's name and address. In our law report a case is reported which occasioned expense and annoyance to a Cambridge chemist, simply because he seems to have been confused in his notions respecting the position of vermin killers in the Schedule. We are impressed with the necessity of putting these and other legal matters very clearly before the trade, and therefore we have decided to draw up a circular intended for reference, which we shall shortly present to all our subscribers.

THE NEXT PHARMACEUTICAL CONFERENCE.

It has been recently announced that the meeting of the British Association, which was fixed at Bradford for September 10th, has been altered to September 17th. The reason of this is stated to be for the convenience of many who have objected to the date. This will doubtless cause the meeting of the Pharmaceutical Conference to be held a fortnight earlier also. The dates given in our diary are therefore, unfortunately, incorrect.

AMORPHOUS QUININE.

For some time past, Mr. Broughton, the Government quinologist in India, has been endeavouring to introduce to the hospitals of that country a cheap substitute for the costly English-made sulphate of quinine. This preparation is simply the alkaloids exactly as they occur in the cinchonas of the Neilgherry plantations. Such a combination is, of course, much more easily and economically extracted from the barks than the sulphate pure; and from a long series of reports from various parts of India, we gather that the new compound is very little, if any, inferior to quinine as a remedy in febrile cases. Mr. Broughton has calculated that the Neilgherry plantations might yield about 1,300 lbs. of this article annually, the cost of production hovering between 1s. and 1s. 6d. per ounce, while there is little hope of reducing the cost of quinine below 5s. per ounce. We have not the figures of the whole of India before us, but we know that in the Presidency of Madras alone, the consumption of quinine at this time reaches nearly 400 lbs. annually, so that the saving Mr. Broughton has indicated would be very considerable. The new preparation, amorphous quinine, as it is called, is described as of a straw colour, rather coarse in the grain, and somewhat heavier than the sulphate.

AMERICAN PATENTS.

The *Scientific American* makes up an amusing article by recounting a few of the applications which have been made in that country for patents. One gentleman proposed an artificial moon to be worked in this manner:—From each town where the patent was adopted a mighty balloon was to ascend each evening, carrying with it a huge reflector. This was to be hoisted to such a height that it might intercept the rays of the sun as they shot upwards, and cast them back on the earth. Another gentleman, whose scientific education had been equally finished, asked for a patent for a new method of constructing artesian wells. He gravely set forth that he had made the discovery that quicksilver was heavier than common earth. He therefore proposed to start a hole, and to empty into it a little mercury. By the laws of Nature, that mercury would be sure to work its way downward till it struck water, and the water would then be sure to work its way upwards till it struck air. An applicant for a patent for wooden pavements proposed to mount each block of wood on springs. He claimed that this would remove all jar in riding, and obviate the necessity of springs on carriages. Another gentleman applied for a patent for heating canals by steam, so that boating could go on in winter as well as in summer. The officer decided that this invention was worthy of protection, and gave him his patent. Another applied for a combination of clock and bed, so ingeniously contrived that, when the clock struck, the bottom of the bed dropped out. He claimed that this plan would probably awaken the sleepers. Somebody invented a plough expressly adapted for outlying districts, the handles being revolver rifles. With these loaded, the farmer could go to his work with a calm assurance of safety, and when the guerillas approached he could shoot them down without warning to them or inconvenience to himself. A swivel cannon was patented in England in 1718, its peculiarity being that it would fire square balls at one end and round balls at the other. The round ball was to be used in all fights against Christian nations; the square balls, that would mangle the flesh more, only in contest with Turks and other heathen. This may have been the origin of Mark Twain's suggestion of a swivel gun that would load at the centre and fire off at both ends. In case of a siege, he proposed to load the gun, set it whirling, and drop it just outside the city walls. Before the balls left the mouth of the cannon, they would acquire such a rotary motion that they would sweep round the walls outside of the town, killing off all the besieging host. Notwithstanding the evident absurdity of some of these inventions, Yankees have been found willing to pay thirty-five dollars for the exclusive right to work them.

FRANCE.

PARIS, Jan. 6, 1873.

THE year has commenced quietly and hopefully for France, though political complications are looming in the near future. This, however, is a chronic state, and Parisians are not given to anticipate trouble much. It would be no news to tell you how marvellously the nation has recovered both morally and materially from the effects of the late war, and that of itself is almost sufficient ground for expecting some new intrigues and difficulties. But there are two reasons which seem to augur peace, for at least another year, and by that time France may have settled down into a more steady and prosperous course than she has known since the Bourbons first ruined her. One reason is the intensely vivid remembrance of the horrors of the Communist reign of terror which is still retained, and the other is the rapidly growing power of the Republican party. It is becoming apparent, to all order-loving minds, that nothing but a Republic can save France, for the triumph of the Right, with its heterogenous elements, could only be the signal for a scramble for power in which all parties would join, and the result of which no one could predict. If M. Thiers, therefore, can steer us safely through the shallows where we now find ourselves, we may reach deeper and safer waters.

In commencing my report of pharmaceutical matters I may mention first, the interesting fact of the new organization of the old-established journal the *Repertoire de Pharmacie*. Some new blood has been infused into the administration, and it now includes among its editorial staff the most spirited and most intelligent of Paris pharmaciens, with a very respectable staff of correspondents throughout the provinces. Among the *redacteurs*, I will mention two whose names are familiar to your readers, M. Delpech and Limousin. We may now count on having a really good representative journal of pharmacy in this country. A little story which I find in a recent number is worth reproducing. It is headed "Dangers de la Gourmandise dans une Pharmacie." It is related that an assistant to a pharmacien in Paris, had to prepare some arsenic granules lately, and having made the paste, he cut it into strips, and set it aside on a high shelf till the next day, to dry. Soon after, a young American lady, very tall, brought a prescription and decided to wait until it was prepared. While the pharmacien was busy at the dispensary this young lady, says my authority, "put herself to the inspection of the pharmacy, handling everything within her reach, according to a custom too general among foreigners." At last, she came to the arsenic paste, and thinking she had discovered some Pâte de Guimauve, proceeded to enjoy herself. By good chance, the pharmacien noticed her just in time to prevent her from swallowing the poison, and her death was thereby averted. But with a comic solemnity, he relates how she refused to be frightened at her narrow escape, the words *acide arsenieux* having apparently no terrors for her. Probably, she failed to understand him. Any way he says, she left the shop with an evident grudge against the proprietor, for she remarked that in the druggists' shops in America, pastilles and bonbons were invariably laid out for the delectation of the customers.

Towards the end of last year the *préfet* of La Corréze addressed a circular to the mayors in his department, calling attention to the laxity of administration of the Pharmacy laws, and urging them for the sake of the health of the community to punish very severely all offenders contravening these acts. The sale of certain poisonous substances in France by unqualified persons subjects the transgressor to a penalty not exceeding 600 francs, as well as from three to ten days imprisonment. M. le Préfet makes especial reference to phosphor paste, which, he rather curiously remarks, is not only a violent poison, but also presents a serious source of danger as a cause of fires. It is to be hoped that this gentle spurring in La Corréze will have the effect of rousing the authorities generally to a sense of the importance of more strictness in the prosecution of illegitimate pharmacy throughout Pharmacy.

The *Pharmacopœia Germanica* was introduced as the standard guide for pharmaciens in Alsace-Lorraine on the 1st of November last. All the chemists in those provinces have also been notified of the list of articles, which, according to German laws, they are compelled to keep in stock.

The Belgian chemists have started a Pharmaceutical conference (*Fédération pharmaceutique*). They met for the first time in the month of November last at Brussels. The discussions turned chiefly on their grievances, among which we find to be the free admission of compound medicines into the country, the dishonest system of lending names, by which evasion of the law unqualified persons carry on business, and certain details of the law. The Federation was well attended by pharmaciens from all parts of the little kingdom. M. Somers, pharmacien at Ghent, was the president.

The Italians have formed a pharmaceutical congress, chiefly with scientific objects. Their first *séance* was held in Rome on November 7th, 1872.

Some important information comes to us from Alsace, from which it seems probable that a not inconsiderable petroleum industry may be expected to spring up in that province. An English chemist, I hear, has opened works at Schattweil, in the forest of Haguenau. The petroleum beds lie about fifty yards from the surface, and the oil is said to be very superior to that of America, though this last assertion may be merely the opinion of the English chemist himself.

Your readers are doubtless very well acquainted with the toilet vinegar of Jean-Vincent Bully. The present proprietors of this article are Messrs. A. and M. Landon, and these gentlemen have just gained an action against a firm composed of Messrs Renault and Joseph Bully, who were doing a business by putting up the "Veritable Vinaigre de Toilette de Joseph Bully," in bottles of the same shape and with labels of the same style as the original. Messrs. Landon laid their damages at 10,000 francs, of which the Tribunal de Commerce allowed 500 francs, at the same time issuing an injunction against the new firm, prohibiting them from using bottles or labels of a misleading character in future.

The Parisian perfumers are to have a special and representative saloon, constructed for them in the Vienna Exhibition, which they will be sure to furnish in the most tempting manner.

UNITED STATES.

NEW YORK, December 23, 1872.

THE most important event since my last letter has been the sudden death of Horace Greeley. His disease, following so soon after our great political struggle, in which he had taken such a prominent part, and its still more sad termination, have awakened the strong chords of sympathy throughout the world. As a great and prominent journalist, his name will always be held in deepest reverence; as a man prominent in some of the greatest reforms of the age in which he lived, and as the persistent advocate of the anti-slavery movement in those days when such opinions were shared by but few, he will have the admiration of the world. When the Republican party was originated, he was one of its founders, and until within a few years one of its strongest and most able partizans. As a politician he failed to reach the success to which he aspired. In private life he was simple, kind to a fault, willing to do anything for others, but peculiar in his personal habits and appearance. The ill fortune which attended his effort to reach the presidential chair was beyond a doubt the cause of his sudden decease. Immediately after the result of the election was known, he resumed his position as editor-in-chief of the *Tribune*, and for a few days furnished some characteristic editorials. It was but of short duration, however, and the reaction caused by his appreciation of the popular verdict of his countrymen, affected his mind. During the last days of this celebrated man a cloud came across his intellect; his mind gave way under the struggle which it suffered. We remember not now his follies, nor the many things which in the recent campaign were uttered, but render just tribute to his worth as a citizen and journalist. His funeral was one of the greatest ovations ever given to the remains of any private citizen of our land.

The sensation of the scientific people of our city, as well as many who are not ranked among scientists, are the lectures of Professor Tyndall. The course of lectures given by him in Boston, and also in Philadelphia, were largely attended by enthusiastic and delighted audiences, which completely filled the house, but which were not very profitable pecuniarily to the lecturer, owing to the arrangements which limited him to a certain sum of money. The course which he is now giving at the Cooper Institute, in this city, are thronged, and he not only has the pleasure of being heartily appreciated, but also of great pecuniary reward. Professor Tyndall has achieved a popularity with us, which must gratify him, and the delightful and clear manner in which he presents his lectures, as well as the magnificent style in which he illustrates his subjects, are particularly acceptable to his audiences.

Mr. Froude has been listened to with great pleasure by large and appreciative audiences, and they have derived much new and valuable historical information on the subjects which have made so much controversy between England and Ireland.

The Rev. Father Burke delivered a series of lectures in reply to what he called the errors and misrepresentations of Mr. Froude, to immense audiences, at the Academy of Music. The reverend gentleman addressed himself rather to the feelings of his own countrymen than really cleared up the statements of his opponent, and some of the daily press of our city have taken care to give prejudiced reports of the controversy, siding with the cause of Ireland, as they deem it most popular, *politically*. If we judge the controversy dispassionately, it is evident that Mr. Froude has given not only the more masterly argument, but sustained his position by proof not to be set aside on the mere assertions of an opponent, who appeals rather to the passions than depends upon historical facts or research.

Among other Englishmen now before our public as lecturers, there are George Macdonald, Edmund Yates, and Professor J. H. Pepper, the former of whom has given some delightful lectures in this and other cities. Edmund Yates is a failure; and Professor Pepper, while pleasing as an experimenter, is not to be compared to Professor Chandler, of our city, or Professor Barker, of Yale College, either as a lecturer or experimenter.

At a recent meeting of the College of Pharmacy, of this city, Professor Markoe, of Boston, was present, and by invitation gave an interesting account of the late meeting of the British Pharmaceutical Conference at Brighton, and his views on English Pharmacy, and Mr. Paul Balluff read a review on the general principles involved in the construction of the Pharmacopœia Germanica. This College has increased greatly in membership, and is to enlarge its Board of Trustees by the election of two additional members.

While many of the apothecaries of Great Britain are said to secure but a very moderate income, it is evident that in our land pharmacy has not reached the point which gives its followers a generous reward. It would appear that those who do a moderate business in suburban and country places as a general thing, are more apt to accumulate than those in our cities. The fearful increase in all kind of expenses, but especially rents, falls most severely upon those who do business in the cities. This city, for instance, is noted for the extravagance of its rents for retail business, and it is a mystery to many how business can be done which will adequately compensate the proprietor. There is no class of business in this city which, taking the average, rewards the proprietor more inadequately for the skill, care, and attention given to it, and none where so much is expected in return for the little expended. But for all this, there is no less a desire among the pharmacists to maintain the honour and dignity of their vocation, and the tendency is to attain a more thorough education of those who are to follow our footsteps.

The new Pharmacopœia, which has now been in the hands of the final Committee of Revision since June, 1870, will appear about February. Of course the contents of it are not generally known, nor can any definite information be obtained. A much larger committee was appointed in 1870 than at any preceding revision of the work, in order that the various portions of the country should be represented. It is to be hoped that it will show an advance on its predecessors worthy of the progress which has been made in pharmacy and science during the past decade.

CALIFORNIA.

We have received from San Francisco the annual report o the California Pharmaceutical Society, which we have read with considerable pleasure. During the year 1872 an Act was passed regulating the practice of pharmacy in San Francisco. It was impracticable to extend it to the whole State, as it would have caused immense public inconvenience in many localities. The Act is evidently framed on the model of our own, but contains in addition a striking section which provides that any "registered pharmacist who shall knowingly, intentionally, and fraudulently adulterate or cause to be adulterated any drugs, chemicals, or medicinal preparation, shall be held guilty of a misdemeanour, and on conviction shall be find 50 dols. in the first, 100 dols. in the second, and on conviction in the third case his name shall be erased from the register."

It also contains a section which will severely cripple medical practitioners who may wish to keep an open shop, and it exempts all persons registered under its provisions from jury duty. So it is evident that the San Franciscan pharmacists have no little influence in their State Legislature. The schedules, too, are somewhat better arranged than ours, opium and its preparations, for instance, being included in the first part (subject to regulations similar to our own), but special exemption is granted to "paregoric and other preparations of opium containing less than two grains to the ounce." It appears from the register that there are seventy-seven practising pharmacists in the city of San Francisco. A School of Pharmacy is about to be inaugurated, and altogether pharmacy seems to be flourishing very vigorously on the Pacific slope.

The report before us contains other matters of pharmaceutical interest besides the local items we have named. A trace of Californian humour bursts through occasionally, as, for example, when under the head of New Remedies we are introduced to "Cundurango, so much vaunted for the cure of cancer, appears to have gone up like a rocket, and we have not even the vestige of the stick." In commenting on certain developments of elegant pharmacy the writer refers to a very palatable elixir of cinchona, prepared by percolating coarsely powdered cinchona with aromatic waters, and afterwards adding brandy and simple syrup. This preparation possessed the peculiar merit of *not* being precipitable by the persalts of iron. He adds, "We have also known a very pleasant elixir of Valerianate of Ammonia, which had been *deodorised* by ebullition."

We shall look with interest to the future history of pharmacy in California.

There was no evening pharmaceutical meeting at Bloomsbury-square this month.

Curing Hams.—The following recipe, says the *Boston Journal of Chemistry*, is that according to which the ham that took the first premium at the Maryland State Fair was cured:—Mix two and a half pounds of saltpetre finely powdered, one-half bushel fine salt, three pounds brown sugar, one-half gallon molasses. Rub the meat with the mixture; pack skin down. Turn over once a week, and add a little salt. After being down three or four weeks, take out, wash, and hang up two or three weeks until it is dry. Then smoke with hickory wood three or four weeks, then bag or pack away in a cool place—not a cellar—in chaff or hay.

Medical Gleanings.

THE struggle for existence among the medical journals is already painfully keen, and leads to an abnormal development of the "Billingsgate" bump in those journalists who are unfortunately drafted on to the staff of one of the "medicals" To improve this state of things (if extension means improvement) Messrs. Smith, Elder, and Co. have burst on the world with a new weekly, entitled the *Medical Record.* This paper is stated to be necessary for the reason that "the age of year-books has almost passed away" (*vide* prospectus). What relevancy there is in that assertion is beyond our comprehension. We cannot very clearly see any meaning in it. But a bad excuse is better than none, and perhaps Messrs. Smith and Co. saw no necessity for informing the world that they had lately bought up some medical copyrights, which the *Medical Record* can, perhaps, help to work off. Mr. Ernest Hart, the editor of the *British Medical Journal,* is to be editor also of this new venture, and it is to be hoped that he will bear being split into two sections in this manner. He announces an immense staff of *collaborateurs,* and certainly the first number is a good specimen of work. It contains brief notices of the various sections of medical science, and nothing besides. No abuse, no personalities, no "answers to correspondents," no medical annotations. We fear it will find but a limited circle of readers among the medical profession, the majority of whom learned all their science for life at the hospital.

At Edinburgh the ladies have worked their way a little further. It has been decided that those at present half-way through their studies may have facilities for proceeding, but the privilege shall not be renewed. Miss Jex Blake sagely accepts what is offered, but declines to regard it as a bribe, and announces her intention to keep the fight going. At an election of managers the other day two lists were put up, one for, the other against, the claims of women. The misogynists were successful, but only by the narrow majority of 8. The numbers polled were 271 on the ladies' side, and 279 against them. In spite of all that Edinburgh may say or do, ladies are determined to enter the medical profession, and we (the public) are determined to have them.

The Paris correspondent of the *British Medical Journal,* writes that the medical courses there are now open, and that three or four ladies are attending the *cliniques*:—"they are modest, well informed, and intelligent ladies, and are much respected and kindly received by the professors; and our students, turbulent as they are, know how to respect those who come among them as strangers appealing to their gentlemanly souls, and show a better example than your riotous students of Edinburgh."

Mr. James Startin, F.R.C.S., the well known physician for skin diseases, in which speciality he was singularly successful, died on December 24th, at the age of 66. We believe Mr. Startin was the first to introduce glycerine into medical practice.

The *Australian Medical Journal* has a correspondent in London who signs himself C. J. This gentleman has the opportunity of conveying to medical minds in our Southern empire just such notions of metropolitan matters as may seem good unto him; but in compiling his fiction he should arrange his statements with a little more regard to unity of design. For example, which of the following assertions does C. J. intend to abide by? the two following each other, in the same letter, in a very simple manner. First he writes:—

"Since the Pharmacy Act was passed, chemists have raised the price of their drugs very much, and as a consequence, people dread taking a prescription to be made up." And then, "People here in London have always had a great tendency to seek advice and medicine in the same quarter. So now, as there are fewer men than of old who keep open shop, the public tend more and more to apply to the uninstructed chemist for advice and medicine too. What the remedy for this is I know not; educating the people may do it, but I greatly doubt it."

To educate C. J. might, perhaps, prevent the recurrence of this nonsense, but we greatly doubt it; a rooted jealousy of chemists and druggists is the real author.

The College of Physicians has lately drawn up and sent to Lord Granville an elaborate report on the parcel of condurango which his lordship, as Foreign Secretary, had sent to them for trial. The conclusion arrived at is, that the drug is "inert and useless." We thought the old swindle was dead and buried. It is strange that the medical profession should seem to cling to it with such fond pertinacity.

At the next International Exhibition there is to be a display of surgical instruments, and there seems every reason to expect that a very complete and interesting collection will be got together. A most influential committee of surgeons has been appointed, with Mr. Cæsar H. Hawkins as president, and it is said that the leading surgical instrument makers of London, Paris, and other capitals, have undertaken to contribute.

Mr. Campbell de Morgan is responsible for the publication, if not for the authorship, of the parody which we print below, in which hydropathy undoubtedly gets the worst of it. We present both the original and the parody:—

"The solid rock the Hebrew smote,
Amidst the desert wild;
The bounteous waters issued forth,
And all the desert smiled."

"His stolid head our prophet smote,
As rugged and as wild;
The water-system issued forth,
And all the doctors smiled."

The death of Mr. H. D. Carden, of Worcester, is announced. This gentleman was one of the most eminent of provincial surgeons, and for many years past has enjoyed a high reputation in his locality for consultations.

A very sad death is that of Mr. Holmes Coote, the senior surgeon and lecturer on surgery at St. Bartholomew's Hospital. Mr. Coote died in a public lunatic asylum at the age of fifty-six, and has left his family destitute.

A son of Sasumi, the principal physician to the Mikado of Japan, came to Europe in November, 1869, and settled at Berlin. At that time he was not acquainted with a single German character. In five months he had mastered the language, and became a medical student in the University. Exactly two years after his arrival he went in for an anatomical examination, and out of thirteen, he and one other only attained the distinction of "good."

A certain Dr. Lane, of San Francisco, set the broken arm of a certain Luther Corey, after other surgeons had vainly tried to perform the same operation. At any rate, this was the story recorded by the *San Francisco Bulletin,* which also reported how that Dr. Lane had declined to accept any payment for his skill. The *San Francisco News Letter* does not believe in human generosity, and, therefore, a few days later tells the *Bulletin's* story in the following manner:—

"A TALE FOR LITTLE FOLKS.—This is the sto-ry of good doc-tor Lane, for oth-er good lit-tle doc-tors to read and try to be like him. Lu-ther Co-rey broke his arm, and good doc-tor Lane kind-ly set it for him in so skill-ful a man-ner that it was two inches short-er than the oth-er. When he had done for Co-rey, good doc-tor Lane said to him, 'If you have no mo-ney you need not pay me now, but go and tell the pa-pers how I set your arm in a skill-ful man-ner.' Co-rey did as the good doc-tor asked him, for he was grate-ful, and his head and his heart were soft. So the pa-pers print-ed Co-rey's sto-ry, and this was worth a mint of mon-ey to good doc-tor Lane, be-cause it was an Ad-ver-tise-ment. So is this tale which you are read-ing. It is an Ad-ver-tise-ment of doc-tor Lane, and of price-less val-ue to him. Oth-er doc-tors ought to lay to heart this tale of the good doc-tor Lane, and send their char-i-ty pa-tients to the pa-pers, which will tell all a-bout the char-i-ty. Then they will all be thought skill-ful, called 'good,' like the good doc-tor Lane. When *News Let-ter* shall break his own arm, he will go to good doc-tor Lane to set so that it shall be two inch-es short-er than the oth-er, and then we will give him an-oth-er first-class no-tice."

At last there seems a fair prospect of a Hospital Sunday in London, which ought to realise not far short of £30,000. The matter, however, is now in the hands of a committee, and therefore there is no telling when the event will come off. It is reported that at one of the committee meetings the Archbishop of Canterbury suggested that the Nonconformist body should be asked to co-operate. Doubtless; but is it really a fact that no one thought of that extraordinary idea until his lordship suggested it?

Homœopathy.

A SUGGESTIVE IDEA.

THE *Homœopathic World* tells a little anecdote which is sufficiently extraordinary on the surface and which is certainly new to us. Some years since, we read, Dr. Houat proposed to the Société de Médicine Homœopathique de France, that they should send him a remedy in the fifteenth centesimal attenuation, and he would take it and diagnose the drug from the symptoms produced in him. The proposal was accepted. A commission was appointed by the society, consisting of Drs. Crétin, Léon, jun., and Teste. This commission chose six different drugs, all in the fifteenth attenuation. These were *Aconitum, Arsenicum, Belladonna, Calcarea, Carbonica, Mercurius*, and *Sulphur*. One of these was chosen. Two days elapsed, and Dr. Teste sent Dr. Houat a little bottle without any label, and apparently filled with clear, pure spirit of wine, accompanied by the following letter:—

"Dear Colleague,—"I hereby send you the remedy, the symptoms and name of which you are to tell us.

"With the wish that you may succeed,

"I am, yours, etc., Teste."

Dr. Houat returned his answer in due course, and it was opened in the presence of the whole society. The answer contained no less than 390 symptoms, which the experimenter said belonged to *Belladonna*. Dr. Curie, the Secretary of the Society, opened an envelope, containing the name of the drug sent to Dr. Houat. That name was *Belladonna!* It is said that Jahr made a similar offer.

The publication of this story in a homœopathic journal is at least an indication that the test proposed is regarded as moderately fair. To us it would be conclusive if the conditions were slightly altered. First of all the whole thing was performed in a corner, and more unfortunately still the corner was that of the homœopaths themselves. Then it would seem that only six medicines were to be selected from, and no doubt Dr. Honat was informed of the names of these six, so that a lucky guess was all that was needed, even had the other conditions been more unfavourable. Thirdly, we remark that the concluding sentence of Dr. Teste's letter is fatally suspicious; and fourthly and finally we are perfectly convinced that no living man could ever detect 390 distinct symptoms from one remedy. The anecdote proves too much, but at the same time if any distinguished homœopath is still prepared to offer a similar challenge we will undertake that its hall be accepted.

CHEMISTS SELLING HOMŒOPATHIC MEDICINES.

The Homœopathic Pharmaceutical Association in Great Britain announces its intention of endeavouring to induce the wholesale homœopathic chemists to withdraw their agencies in towns where homœopathic chemists are established. Surely the association might find some profitable occupation than this. Suppose they do succeed in inducing the present wholesale homœopathic chemists to conform to their fancies. Commerce, like nature, abhors a vacuum, and the moment there is room for one we are quite confident that another wholesale purveyor will come into the business. Chemists are perfectly justified in making homœopathic medicines a part of their stock. It is not their duty to indicate to their customers the system of treatment which they ought to adopt. And we urge them to give to this department as thorough and as conscientious attention as to the rest of their business.

Beet Sugar in England.—Mr. Duncan, at his sugar factory at Lavenham, Suffolk, produced, in 1868, 1,000 tons in 1869, 3,400 tons; in 1870, 4,500 tons; in 1871, 6,200 tons and in this year it is expected that the production will be from 8,000 to 10,000 tons.

Bismuth is said to occur in Utah, 200 miles south of Salt Lake City. The lode is said to be seven feet in thickness and to have been traced for twelve hundred feet.

Dentistry.

INSTRUMENTS FOR THE EXTRACTION OF TEETH.

THE following is the main part of a lecture delivered before the Pennsylvanian State Dental Society by Dr. John M'Calla. For the report we are indebted to the *American Journal of Dental Science*:—

Among the first instruments of which we have any account, is the *vulsella*, described by Celsus, about the commencement of the Christian era; it is said to have been a kind of forceps, the beaks resembling the bill of a parrot; this instrument, with slight alterations, came in time to be known as the hawksbill forceps, or *davier* of the French, and in connection with various levers and punches, continued in use for several centuries. The *elevator* next succeeded the forceps, and if we may judge from the description given of the method of using it, we shall be forced to the conviction that the operation of extracting teeth lost none of its terrors by the change. Following this, we have an instrument similar in its action to a key, furnished with claw and fulcrum, but lacking the power and safety of the latter. Among the levers employed, we find the *peid-de-biche* (hind's foot), *laugue-de-carp* (carp's tongue), or *trevelin* of Lecluse, for the extraction of roots: it is a curved lever, terminating in a bayonet point, and was said to be a perfect instrument for the extraction of wisdom teeth, by placing it between it and the second molar. Another called the lever *a-crochetet-a-plague* (the lever with hook and plate), bears some resemblance to the key, though much inferior to that instrument. The *pelican*, an instrument formerly much in use, was furnished with a lever, fulcrum, and claw, and approximated more closely to the key than any of its predecessors. In the early part of the 18th century the *key* instrument, invented by Garengcot, came into use; the facility of acquiring command of this instrument, and the amount of force it was capable of exerting, soon brought it into general favour, and it must be admitted that where but one instrument could be obtained none would answer all purposes as well as the key; its defects were sought to be remedied from time to time by the ingenuity of Van Butchell, Spence, Saviny, Duval, and a host of others; to the last-named gentleman we are indebted for the introduction of the movable fulcrum, one of the most valuable improvements which this instrument has undergone

To Mr. Cartwright, of London, we are indebted for the first return to the use of the forceps; he so improved them as to enhance very much their efficiency, and about the year 1830 first brought them to public notice; they soon came to be regarded as safe and more reliable than the key. Mr. Snell, taking up the idea of Cartwright, soon followed in the line of improvements, by adapting the beaks to the neck of the different classes of teeth by means of nibs, grooves, and crescents, and added to the better application of the extractive force, by bending one of the handles so as to pass round the hand of the operator, thus preventing the liability of slipping. Dr. J. F. Flagg, of Boston, is entitled to the credit of an improvement in the hawksbill forceps, which consisted in more accurately adapting its form to the necks of the teeth, and at the same time giving a shape and position to the handles, which would enable the operator to apply the necessary power to greater advantage. A further improvement on Snell's instruments, by Prof. C. A. Harris, consisted in such a change of the handles as brought the motive power, or hand, near on a line with the long axis of the tooth, while the change in the angles and curves enabled the operator to bring the hand nearer to his chest, and under the instrument, thus giving greater command over it, without any loss of power.

Dr. Edward P. Church supplied a want long felt by the profession, in the invention of forceps forming two nearly right angles, above the joint, for the extraction of the superior wisdom teeth.

Dr. J. W. Crane, of New York, invented two pairs of forceps for the extraction of lower molars: one for the first and second, on either side, and the other for the wisdom teeth.

Dr. Hullihen's compound screw forceps, for the extraction of the roots of incisors and canine, in the upper jaw, you are all familiar with.

To Dr. E. Maynard, of Washington, D.C., we are indebted for forceps designed for the removal of the roots of upper molar teeth, before they have become separated from each other; there are two pairs, one for each side of the mouth, and though not often brought into requisition, they are admirably adapted to the class of cases for which they are intended.

Dr. Elliott has furnished an instrument for the extraction of the roots of molar and bicuspid teeth; but of its merits we are not prepared to speak.

The forceps bearing the name of Dr. Physick are found to be very useful in separating the roots of lower molars previous to their removal; they have been highly spoken of by some operators for the extraction of lower wisdom teeth.

John Tomes, of London, claims to have made valuable improvements in tooth forceps.

Mr. Fay and Mr. Matthews, both of England, introduced, some years ago, what was known as the *adjusted forceps;* they were brought to notice by both these gentlemen about the same time, neither being aware of the other's improvement. The advantages possessed by these instruments consist in their anatomical adaptation to the neck and crowns of the several classes of teeth; and this we regard as a *sine quâ non* in the fabrication of dental forceps.

The importance of starting out in the profession with good instruments cannot be over-estimated. With those first adopted we become most familiar from daily association, and while their defects may be numerous and radical, we are sometimes slow to recognize and correct them. I have met with instruments for extracting teeth, in the case of both physicians and dentists, that would set at defiance all the known laws of mechanics, and overmatch the ingenuity of the most skilful artisan to adapt them to any useful purpose. Our advice invariably in such case is, throw them away, put them beyond your reach, and thus reduce the chances of fracture and other unpleasant complications. It is too frequently the case that young beginners procure such instruments as are pointed out to them, or take up those of some one retiring from practice, and seldom or never entertain the idea of improvement. We are happy to say, however, that this is not the rule; valuable improvements have been made from time to time, and the result of a combination of these are now to be found in the hands of a large portion of the operators of the present day. The most important requisites in forceps we conceive to be: 1st. A proper adaptation of the beaks to the necks and crowns of the teeth. 2nd. The handles should be as near on a line with the longest axis of the tooth as possible, yet sufficiently bent to avoid coming in contact with the opposite jaw. 3rd. The length of the handle should conform to the hand of the operator; long handles are particularly objectionable. 4th. The handles should be bent in such a manner as to place the operator in the most favourable position in relation to the patient. This is generally conceded to be on the right side, or right and rear. The head is best controlled in this position.

To insure success in the extraction of teeth, a careful diagnosis is of the first importance; an accurate acquaintance with the normal and pathological conditions of the teeth and their surroundings, and a sound judgment in relation to the obstacles to be encountered, is calculated to inspire the operator with a confidence in his own practical abilities, which will enable him to meet the physical indications in each individual case.

Another object to be aimed at is to gain the confidence of the patient. A kind and affable demeanour on the part of the operator, accompanied with candour and firmness, will seldom fail to accomplish this object. All unnecessary display of instruments should be avoided, and the surroundings of such a character as to allay the fearful apprehensions of the weak and timid. These conditions being complied with, we are now prepared to select the instruments best suited to the case in hand.

For the removal of the upper incisors, the instrument most frequently employed has straight beaks, and on a line with the handle, both blades grooved and crescent-shaped at point; to conform to the necks of this class of teeth, the bowl or beaks should be sufficiently separated to admit the crown without pressure, as the object should be to grasp the tooth at or above the neck, in order to secure the best result. It will be found most convenient to have the lower handle bent, to pass round the little finger of the operator; the motion which I have found most effective in removing these teeth is the downward, or inward, after a slight rotary movement; the alveolus being shorter and thinner on the inner side, the attachments are more readily sundered by a motion in this direction. The instrument which I prefer for extracting the upper bicuspid differs from the one just described, in having the beaks narrower, and bent at an angle of about forty degrees, with straight handles; to give the necessary strength to this instrument, we should add to the thickness of the beak what it lacks in width. One instrument answers for both sides of the mouth. The rotary motion is inadmissible in the removal of these teeth, owing to conformation and position; the outward and inward motions should be given, particularly the latter. The value I set upon this instrument may be estimated when it is known that I use it for all roots in the upper jaw, after they have become separated from each other, and not unfrequently have extracted all the upper incisors, canine and bicuspids, with it alone.

The upper molar tooth having three roots, two buccal and one palatine, instruments for their extraction should be constructed to meet this anatomical arrangement; hence the necessity for two pairs, right and left, straight handles, and the beaks sufficiently wide to take in all the crown, and bent at an angle of about forty degrees; the point of the inner beak should be curved, so as to embrace closely the palatine root, while the outer one requires a double groove, terminating near the centre in a strong, sharp nib. In arresting the tooth, this nib is forced into the depression between the buccal roots, when the inward and outward motion is given, and the organ dislodged. I prefer to have one of the handles curved, as in the incisor instrument.

The forceps previously noticed as the invention of Dr. Church are well calculated for the extraction of the upper wisdom teeth; the beaks are parallel with the handles, but removed about one inch from the same line by means of two angles above the joint; the points are both crescent-shaped. It is but seldom that we meet with a divergence in the roots of these teeth, hence the nib is not required. This instrument answers equally well for both sides of the mouth.

Passing to the lower jaw, we select an instrument for the removal of the incisors, canine and bicuspids, similar to the one employed for the upper bicuspids, the only difference being in the angle of the beaks, that of the upper being about forty degrees, while the one under consideration has an angle of sixty degrees at least; the handles straight, and beaks narrow but stout. With this instrument I remove the ten anterior teeth in the lower jaw, and all the roots of the lower molars after they have become separated from each other.

For the extraction of the lower molar teeth, one instrument is sufficient for both sides of the mouth. These teeth having two roots, both beaks of the forceps should be furnished with stout nibs, to penetrate the bifurcation; holding the instrument in the right hand, as if about to use it, and taking the shank, or joint, as the base, we have the handles bent toward the left hand of the operator at an angle of forty degrees, while the beaks present the same angle in a forward direction, one handle bent around the hand, and the bowl to conform with those previously described. This instrument I regard as decidedly the best I have ever met with for the class of teeth for which it is intended.

For the extraction of the inferior *dens sapientia*, an instrument with straight handles is to be preferred; the beaks slightly narrower than those last named, and bent at an angle of sixty degrees; both points crescent-shaped; the shank should be as small as is consistent with the required strength, in order to afford a full view of the parts to be operated upon; as the roots of these teeth usually turn back in the ramus of the jaw, to a greater or less extent, it becomes necessary to have other appliances at hand to meet the emergencies. The Physick forceps may occasionally be found useful here. I have not employed them to any considerable extent for this purpose. A stout lever, with angles similar to those of the upper wisdom forceps, will be found very valuable, introduced behind the second molar; the force should be applied to the wisdom tooth in an upward and backward direction, following every movement with the eye, in order to guard against forcing the tooth into the throat of the patient.

Having now described all the instruments necessary for the ordinary operations of extraction, let me call your attention to some of those employed for *extraordinary* cases; and first, for the removal of the upper incisor and canine roots, we have the conical screw, compound screw forceps, punch, and gouge. I have tried them all, but for a number of years past, have depended almost entirely upon my upper root forceps. Where the crowns of upper molars have been broken off, or remain by caries, yet an unbroken connection remains between the roots, I have found the instrument invented by Dr. Maynard to excel all others that I have met with. The upper beak forms a sharp, strong hook, bent in such a manner as to be made to readily pass through the junction of the roots, while the lower beak is similar to those of the upper molar forceps; the motion is downward or inward, readily wrenching the organ from its attachments; or when the union between the roots is too slight to resist the force, a separation takes place, when they are readily removed by the upper root instrument. Where the same condition exists in relation to the lower molars, I resort at once to the Physick forceps to separate the roots, and then remove them with the lower root forceps. It is sometimes necessary to extract teeth on account of their irregularity. Where three stand together in a group, it will be found that narrow, strong beaks are indispensable; the locality of the deviating organ will at once suggest to the mind of the operator the form of instrument best calculated to remove the difficulty.

I have not thought it necessary to occupy your time with any remarks in regard to the extraction of deciduous teeth. I have but one instrument specially devoted to this class; it is a small pair of forceps from the manufactory of Charriere, of Paris. They are the neatest, most convenient, and best adapted forceps I have ever met with for the removal of deciduous molars; for all other teeth of the first set I depend upon those already described.

A diversity of opinion exists in regard to the propriety of lancing the gums as preliminary to extraction. It is contended by some that the attachment of the gum to the neck of a tooth is always but slight, and the extent inconsiderable, and that therefore its severance can have little or no influence in lessening the amount of force required in extraction. Again, it is admitted that there is a difference; that the gums should be separated from the teeth before removal; but for this purpose it is suggested that sharp forceps, driven forcibly into the gums, does the work more thoroughly, and is attended with no more pain than that produced by the lancet. Without stopping to combat these opinions, allow me to say, that I regard the lancet as one of the most important instruments in my case. I do not invariably employ it, but it is my practice to lance well, and I do contend that no timid hand should guide the blade. If the instrument is carefully kept, with a smooth and keen edge, the pain attending its use is inconsiderable, and more than counterbalanced by the increased facilities afforded for the expeditious and safe removal of the offending organ. The common, thin, flat handle is liable to turn in the hand; I have found an octagon handle less liable to do so, and much to be preferred.

And now a word in regard to the relative position of operator and patient. This is a matter concerning which no rules can be laid down. The form of instrument employed controls the operator in a great degree as to the position he assumes. With instruments of the hawksbill variety the operator is compelled to follow the inclination of the instrument, sometimes on one side of the patient, and sometimes on the other; while with the instruments here described the operator is never required to leave the right side of the patient, and is thus the better able to control the head with his left hand. The only deviation from this rule is in the extraction of the right inferior bicuspids and wisdom tooth, when he turns and faces the patient, though still retaining his position on the right side. Another important point is to have the operating chair neither too high nor too low. In a word, the surroundings must be such as will best enable us to command the situation; for this purpose I have two small separate platforms, each about four inches in height, placed one upon the other, at the back of my chair; the upper one is easily moved by the foot, and is always ready in time of need In extracting from the lower jaw, we get upon one or the other of these platforms, as the case may require; while, in operations in the upper jaw, we remain on the floor, or mount the first platform, if need be. To be able to distinguish promptly the requirements in each case that presents itself, includes not only a thorough knowledge of the buccal cavity in health and disease, but a familiarity with the various forms of instruments and their modes of action. In this way alone can we acquire that manual dexterity which shou.d ever distinguish the accomplished surgeon.

CHECKING CHEMICAL AND OTHER CALCULATIONS.

By W. H. Walenn, F.C.S.

In all important calculations, it is highly desirable to have a ready means of checking the results obtained. This is sometimes done by the slide rule, by a table of logarithms, or by a recalculation, with fewer figures. The early arithmeticians, considering the laborious work that fell to their hands before the invention of logarithms, were very glad to test isolated operations, such as multiplication and division, by "casting out the nines;" they did not, however, use their process for continuous operations. The continuity of the operation of checking is ensured by using the principle that, *all direct (and some inverse) operations upon the remainders to divisors are respectively analogous to the same operations upon the dividends.* The most practical division is 9, since the mere addition of the digits of a number gives a number which is either divisible by 9 with the remainder that would result from the division of the entire number by 9, or the remainder itself is at once obtained. Some rules that abbreviate the operation, and extend its application, are in great part derived from a numerical theorem published by the author in the *Philosophical Magazine*, for November, 1868; they are as follows:—

1. This remainder (called the *unitate* of the number) for a given number, is obtained by adding its digits together, adding the digits of the result together, and repeating this operation until only one digit is obtained.

In most cases, this rule may be shortened by some of the subsequent rules.

2. If the digit 9, or any two figures whose sum is 9, occurs, it or they may be entirely neglected.

3. If during the process, any number higher than 9 arises, its remainder should at once be substituted, and the process carried on therewith to the termination of the figures composing the number.

4. The unitate of any number, either composed entirely of a finite decimal, or partially of an integer and finite decimal, is the same as if the decimal point were removed to the extreme right hand of the number, or as if all the digits of the number represented integers.

5. The unitate of a fraction may be retained in its fractional form, or, in certain cases, it may be reduced to a single figure. Whenever the denominator has the unitate 3, 6, or 9, it must be retained in the fractional form; when the unitate of the denominator is either 1, 2, 4, 5, 7, or 8, the unitate of the fraction may be assigned by multiplying its numerator by one of the following figures respectively, 1, 5, 7, 2, 4, or 8.

Examples of the application of the above rules.

Example 1.—Required the unitate of 835028. Rules 1, 3, and 4 are to be observed. Say 8 and 3 are 11, (1 and 1 are 2), 2 and 5 are 7, 7 and 0 are 7, 7 and 2 are 9, neglect 9; 8 is therefore the unitate of 835028.

Example 2.—Required the unitate of 6845513. Rules 1 and 2, are applicable in this case. Say 6 and 3 are 9, 8 and 1 are 9, 4 and 5 are 9, 5 remains; 5 is therefore the unitate of 6845513.

Example 3.—Required the unitate of $\frac{235\cdot621}{87125634}$ Rules 1, 2, 4, and 5 apply to this example. Say 2 and 5 are 7, and 2 are 9, 3 and 6 are 9, 1 remains; 1 is therefore the unitate of the numerator. Say 8 and 1 are 9, 7 and 2 are 9, 5 and 4 are 9, 6 and 3 are 9; 9 is therefore the unitate of the enominator. The unitate of the entire fraction is there- re $\frac{1}{9}$.

Example 4.—Required the unitate of $1257\frac{25}{607}$. Say 2 and 7 re 9, 1 and 5 are 6; 6 is the unitate of the whole number. and 5 are 7; 7 is the unitate of the numerator. 6 and 7 re 13, 3 and 1 are 4, 4 is the unitate of the denominator. The whole operation stands:—$6\frac{7}{4}$, or $\frac{31}{4}$, or $4 \times 7 = 28$, and is the unitate of 28, and, therefore, the unitate of the ompound number $1,257\frac{25}{607}$. This number may also be nitated by adding the unitate of the whole number to that f the fraction, thus, $6 \times 4 = 10$; 1 is therefore the required nitate.

Example 5.—Required the unitate of $35\cdot2\frac{31}{610}$. 3 and 5 are , and 2 are 10. 3 and 1 are 4. 6 and 1 are 7. The unitate f $35\cdot2\frac{31}{610}$ is therefore $1\frac{4}{7}$, or $\frac{2}{7}$, or 8; otherwise $1 + (4 \times 4)$ or 7 or 8.

Although, in the above examples, the operations are worked out fully for the sake of clearness, the operation of unitation ultimately, by practice, becomes intuitive. Another distinction between unitation and "casting out the nines," is that in the former operation, 0 never appears, but instead of it 9; in "casting out the nines," 9 never appears, but instead of it 0.

It is a consequence of the principle of this method of checking, that the unitate of the sum of the unitates of given numbers is equal to the unitate of the sum of the given numbers.

Example 6.—$560 + 32\cdot7 + 152\cdot5 + 6\cdot121 = 751\cdot321$.

In unitates, $2 + 3 + 4 + 1 = 10$ or 1;

the unitate of $751\cdot321$ is also 1, thereby checking the result.

Example 7.—$259\cdot5 + 23 + 519\cdot72 + 6\frac{1}{4} + 51 = 859\cdot47$.

In unitates, $3 + 5 + 6 + 4 + 6 = 24$ or 6;

the unitate of $859\cdot47$ is also 6, thereby checking the result.

Example 8.—$121\frac{5}{8} + 132\frac{3}{32} + 257\frac{1}{2} = 511\frac{7}{32}$

In unitates, $8 + 3 + 1 = 12$ or 3;

the unitate of 511^{7} is also 3, thereby checking the result.

Example 9.—$121\cdot625 + 132\cdot09375 + 257\cdot5 = 511\cdot21875$

In unitates, $8 + 3 + 1 = 12$ or 3;

the unitate of $511\cdot21875$ is also 3, thereby checking the result. This example is the same as that of Example 8, but in decimals instead of fractions.

In subtraction, the unitate of the difference between two given numbers, is equal to the unitate of the difference between the unitates of the given numbers respectively. When the unitate of the lesser number is equal to, or greater than the unitate of the greater number, 9 may be added to the unitate of the greater number to enable the requisite subtraction to take place.

Example 10.—$710 - 230\cdot5 = 479\cdot5$,

In unitates $8 - 1 = 7$;

the unitate of $479\cdot5$ is also 7.

Example 11.—$625 - 535 = 90$

In unitates $4 - 4$ or $13 - 4 = 9$.

Example 12.—$60\cdot15 - 52\cdot26 = 7\cdot89$.

In unitates $3 - 6$ or $12 - 6 = 6$.

Example 13.—$69\cdot900 - \{73\cdot356 - (20\cdot201 - \cdot036)\}$

$= 69\cdot900 - \{73\cdot356 - 20\cdot165\}$

$= 69\ 900 - 53\cdot191 = 16\cdot709$.

In unitates $6 - \{6 - (5 - 9)\}$

$= 6 - \{6 - 5\} = 6 - 1 = 5$.

In multiplication, the unitate of the product of any number of factors is equal to the unitate of the product of their unitates. In this operation, the unitates may be reduced as they occur, so that at no time is a factor employed that is greater than 9. It is also well worthy of notice that if the unitate of any one among a number of unitates is 9, the unitate of the result or product is 9; also that if the product of two factors has to be found, one of which has its unitate equal to 1, the unitate of the product is equal to the unitate of the other factor.

Example 14.—$5\cdot632 \times 64 \times \cdot201 = 72\cdot4500\ 8$

In unitates $7 \times 1 \times 3 = 21$ or 3.

Example 15.—$53^2 \times 25^3 \times 51 = 2809 \times 15625 \times 51$

$= 2238421875$.

In unitates $8^2 \times 7^3 \times 6 = 1 \times 1 \times 6 = 6$.

Example 16.—$5\ (46^2 + 13^4) = 5\ (2116 + 28561)$

$= 153385$

In unitates $5\ (1^2 + 4^4) = 5\ (1 + 4)$ or 7.

Example 17.—$25\ (34^3 - 197^2) = 12375$

In unitates $7\ (7^3 - 8^2)$ or $7\ (10 - 1)$ or 9.

The operation of division can be checked by two different methods, using the principles enunciated above. First, the unitate of the divisor may be multiplied by the unitate of the quotient to find the unitate of the dividend, adding thereto the unitate of the remainder, if there is any; this method is analogous to the ordinary method of proving division sums by the inverse operation. Second, the unitate of the dividend may be actually divided by the unitate of the divisor, bearing in mind the fifth rule for unitating, and taking into account the remainder as the numerator of a fraction whose denominator is the divisor.

Example 18.—$\frac{7210473}{37} = 194877 + \frac{24}{37}$

or $7210473 = (37 \times 194877) + 24$.

In unitates $6 = (1 \times 9) + 6$

$= 6$, according to the first method.

and $\frac{6}{1} = 9 + \frac{6}{1} = 6$, according to the second method.

Example 19.—$42)379543(9036\frac{31}{42}$

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378
———
 154
 126
 ———
  283
  252
  ———
   31
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By the first method in unitates $(6 \times 9) + 4 = 4$.

By the second method, in unitates, $\frac{4}{6} = 9 + \frac{4}{6} = \frac{4}{6}$

Example 20.—$\frac{3765897}{23} = 163734\frac{15}{23}$

By the first method, in unitates $(5 \times 6) + 6 = 3 + 6$, or 9.

By the second method, in unitates $\frac{9}{5} = 6 + \frac{6}{5} = 6 + (6 \times 2) = 6 + 3$ or 9.

Example 21.—$\frac{5764123}{340} = 16953\frac{103}{340}$

By the first method, in unitates $(7 \times 6) + 4$, or $6 + 4$, or 1.

By the second method, in unitates, $\frac{1}{7}$ or 4, and $6 + \frac{4}{7}$ or $6 + (4 \times 4)$ or $6 + 7$ or 4.

The ordinary rule of three, being compounded of two kinds of operations—namely, multiplication and division—may be either checked by checking each operation separately, or by performing the statement and operations of the rule of three upon the unitates themselves. The following examples will show this:—

Example 22.—Find a fourth proportional in the statement,

37 : 19 :: 111 : the answer.

```
       19
      ———
      999            In unitates ... 1 : 1 :: 3
      111                                     1
      ———                                     —
 37)2109(57                               1)3(3
      185                                     3
      ———                                     —
      259                                     .
      259                                    ——
      ═══
```

3 is therefore the unitate of the answer.

Example 23.—17 : 26 : : 352 : $538\frac{6}{17}$

```
         26
        ----
        2112
        704
        ----
    17)9152(538 6/17
        85
        --
         65
         51
         --
         142
         136
         ---
           6
         ---
```

$538\frac{6}{17}$ has the unitate,

$$7 + \frac{6}{8} = 7 + 3 = 1$$

To check the multiplication, 1 × 8 = 8, the unitate of 9152.

To check the division (8 × 7) + 6 = 2 + 6 = 8, the unitate of the dividend—namely, 9152.

By the rule of three, 8 : 8 : : 1

```
                       8
                       -
                      8)8(1 the unitate of the
                       8       answer.
                       -
                       .
```

It must here be remarked, that, in the case of unitates, the signs +, −, ×, ÷, : : : :, and =, have not the same signification as in ordinary arithmetic; the words "the unitate of" are understood to be placed before every numerical value set down.

The following examples have direct relation to chemical calculations :—

Example 24.—What is 40° F. in Centigrade degrees ?

$$C = \frac{5\,(-40 - 32)}{9} = \frac{5 \times -72}{9} = 5 \times -8 = -40°\ C.$$

Unitates,

$$\frac{5\,(-4 - 5)}{9} = \frac{5 \times -9}{9} = -\frac{45}{9} = -5 \text{ or } 4.$$

4 is taken instead of 5, because in reality there is no such thing as a negative unitate, and as all unitates may be increased by 9 without altering their effect, 9 − 5 = 4.

Example 25.—What is 20° C. in Fahrenheit degrees ?

$$F = 32 + \frac{9 \times 20}{5} = 32 + \frac{180}{5} = 32 + 36 = 68°\ F.$$

Unitates,

$$5 + \frac{9}{5} = 5 + (9 \times 2) = 5, \text{ and the unitate of } 68 = 5.$$

Example 26.—How much oxygen can be obtained from 50 grammes of potassic chlorate ?

	Grms. of Chlorate.		Grms. of Oxygen.		Grms. of Chlorate given.		Grms. of Oxygen required.
	$KClO_3$		O_3				
	122·5	:	48	: :	50	:	$19{\cdot}59\frac{225}{1225}$.
Unitates,	1	:	3	: :	5		

```
          5
          -
      1) 6 (6
          6
          -
          .
```

The unitate of $19{\cdot}59\frac{225}{1225}$ is $6 + \frac{9}{1} = 6$

Example 27.—How much oxygen can be obtained from 105 grammes of potassic di-chromate by the action of hydric sulphate ?

In accordance with the formula,

Potassic di-Chromate. Hydric Sulphate.

$$2\,(K_2Cr_2O_7) + 8\,(H_2SO_4)$$
$$2(295)$$

Potassic Sulphate. Chromium Sulphate. Water. Oxygen.

$$= 2\,(K_2SO_4) + 2\,(Cr_2\,(SO_4)_3) + 8\,(H_2O) + 3O_2,$$
$$3(32)$$

2(295) grammes of potassic di-chromate give 3 (32) grammes of oxygen. Therefore 1 gramme of potassic di-chromate gives $\frac{48}{295}$ grammes of oxygen, and 105 grammes of potassic di-chromate give $\frac{48 \times 105}{295} = 17{\cdot}0847\frac{135}{295}$ grammes of oxygen.

The unitate of $\frac{48 \times 105}{295} = \frac{3 \times 6}{7} = 9 \times 4 = 9$, and the unitate of $17{\cdot}0847\frac{135}{295} = 9 + \frac{9}{7} = 9 + 9 = 9$.

Example 28.—Given a kilogramme of manganic binoxide, how much oxygen can be obtained from it at a high temperature ?

Manganic Binoxide. Mangano-Manganic Oxide. Oxygen.

From the formula $3\,(MnO_2) = Mn_3O_4 + O_2$, it appears
$3\,(87)$ 32

that 261 grammes of manganic binoxide give 32 grammes of oxygen. Therefore 1 gramme gives $\frac{32}{261}$ grammes of oxygen.

Therefore 1000 grammes give $\frac{32 \times 1000}{261} = 122{\cdot}605\frac{95}{261}$ grammes of oxygen.

The unitate of $\frac{32 \times 1000}{261} = \frac{5 \times 1}{9} = \frac{5}{9}$

The unitate of $122{\cdot}605\frac{95}{261} = 7 + \frac{5}{9} = \frac{5}{9}$

Example 29.—How much carbon will 50 grammes of carbonic acid take up to form carbonic oxide ? What volume of carbonic oxide will be formed ?

Carbonic acid. Carbon. Carbonic oxide.

The formula in this case is $CO_2 + C = 2\,(CO)$.
44 12 $2\,(28)$

2 volumes of CO_2 equals 22·4 litres.
4 volumes of CO equals 44·8 litres.

44 grammes of CO_2 take up 12 grammes of carbon to form 56 grammes of carbonic oxide. Therefore 1 gramme requires $\frac{12}{44}$ and 50 grammes require $\frac{12 \times 50}{44} = 13{\cdot}636\frac{16}{44}$ grammes of carbon, taken up by the 50 grammes.

The unitate of $\frac{12 \times 50}{44} = \frac{3 \times 5}{8} = \frac{6}{8} = 3$.

The unitate of $13{\cdot}636\frac{16}{44} = 1 + \frac{7}{8} = 1 + 2 = 3$.

To obtain the volume of carbonic oxide required, 56 grammes of CO occupy 44·8 litres.

Therefore 14 grammes of CO occupy 11·2 litres, and 1 gramme occupies $\frac{11{\cdot}2}{14}$ litres.

Therefore 13·636 grammes occupy $\frac{11{\cdot}2 \times 13{\cdot}636}{14} =$ 10·9088 litres, the volume of carbonic acid required.

The unitate of $\frac{11{\cdot}2 \times 13{\cdot}636}{14} = \frac{4 \times 1}{5} = \frac{4}{5} = 8$.

The unitate of 10·9088 = 8.

Example 30.—What is the weight of water formed by the combination of 150 litres of marsh gas ?

The formula expressing the change of marsh gas during combustion, is

Marsh Gas. Oxygen. Carbonic Acid. Water.

$$CH_4 + O_4 = CO_2 + 2\,(H_2O).$$
16 2 (18).
2 vols. 4 vols. 2 vols. 4 vols.

From this it appears that 2 (11·2) litres of marsh gas, on combustion, yield 36 grammes of water, therefore 1 litre yields $\frac{36}{22{\cdot}4}$ grammes, and 150 litres yield $\frac{36 \times 150}{22{\cdot}4} =$ $241{\cdot}071\frac{96}{224}$ grammes of water.

The unitate of $\frac{36 \times 150}{22{\cdot}4} = \frac{9 \times 6}{8} = \frac{9}{8} = 9 \times 8 = 9$.

The unitate of

$$241{\cdot}071\frac{96}{224} = 6 + \frac{6}{8} = 6 + 48 = 6 + 3 = 9.$$

Example 31.—In an analysis of glacial acetic acid, 0.395 ammes of the acid yielded 0·580 grammes of carbonic id, and 0·235 grammes of water; also 100 parts of lver acetate contain 61·68 parts by weight of silver. equired the formula of glacial acetic acid.

Given, glacial acetic acid, 0·395 grammes.
Carbonic acid, $\underset{44}{CO_2}$, 0·580 ,,
Water, $\underset{18}{H_2O}$, 0·235 ,,

o obtain the carbon, 44 : 12 :: 0·580 : $0{\cdot}158\frac{8}{11}$

In unitates, 8 : 3 :: 4 : $\frac{3}{8} = 6$; also $5 + \frac{8}{8} = 6$.

To obtain the hydrogen, 18 : 2 :: 0·235 : $0{\cdot}026\frac{2}{15}$.

In unitates, 9 : 2 :: 1 : $\frac{2}{9}$; also $8 + \frac{2}{9} = \frac{2}{9}$.

Thus, if the glacial acetic acid is 0·395 grammes, the caron is 0·158 grammes, and the hydrogen is 0·026 grammes. This is reduced to percentage values by the following proortions:—

For the carbon, 0·395 : 100 :: 0·158 : 40.

In unitates, 8 : 1 :: 5 : $\frac{5}{8} = 4$; also the unitate of 0 = 4.

For the hydrogen, 0·395 : 100 :: 0·026 : $6{\cdot}5\frac{325}{395}$.

n unitates, 8 : 1 :: 8 : $\frac{8}{8} = 1$; also $2 + \frac{1}{8} = \frac{17}{8} = \frac{8}{8} = 1$.

Then, estimating the oxygen, by subtracting the sum of he weights of the carbon and hydrogen (40 + 6·6) from the otal weight taken (100), in percentage value of its constituents, the glacial acetic acid stands thus —

Carbon	40·0
Hydrogen...	6·6
Oxygen	53·4
	100·0

The relation between the combining weights is obtained by dividing the percentage value of each constituent by its combining weight, thus $\frac{40}{12} = 3{\cdot}3$ $\frac{6{\cdot}6}{1} = 6{\cdot}6$, and $\frac{53{\cdot}4}{16} = 3{\cdot}3$.

Therefore, glacial acetic acid = $C_n H_{2n} O_n$, in general terms. To determine the value of $_n$, 100 parts of silver acetate contain 64·68 parts of silver, or the molecular weight of the carbon, hydrogen, and oxygen united with the silver—

(Ag = 108) is $\frac{(100 - 64{\cdot}68) \times 108}{64{\cdot}68} = \frac{35{\cdot}32 \times 108}{64 \times 68} = 58{\cdot}97\frac{3804}{6468}$

In unitates—

$$\frac{(1 - 6) \times 9}{6} = \frac{4 \times 9}{6} = \frac{9}{6}; \text{ also } 2 + \frac{6}{6} = \frac{18}{6} = \frac{9}{6}.$$

As one atom of hydrogen of the glacial acetic acid was replaced by silver, the molecular weight of the glacial acetic acid is found to be, by calculation, 58·98 + 1 = 59·98, or its formula is $C_2 H_4 O_2 = 60$.

For some of the above examples, the author is indebted to Barff's *Scientific Chemistry*, and for the calculation of the formula of glacial acetic acid from the result of its analysis, to Dr. Roscoe's *Lessons in Elementary Chemistry*. Some more details respecting unitates (historical and practical) may be found in an article, by the author, in the number of the CHEMIST and DRUGGIST dated April 15th, 1869, entitled "On Unitation, as a means of checking Chemical and other Calculations."

THE following is said to be an authentic copy of a circular issued by a commercial firm in Bombay:—"Gentlemen,—We have the pleasure to inform you our respected father departed this life on the — inst. His business will be continued by his beloved sons, whose names are stated below. The opium market is quiet, and Malwa 1,500 rs. per chest. 'Oh, grave, where is thy sting? Oh, death, where is thy victory?' We are yours truly, ———."

PHARMACEUTICAL PROGRESS.*

BY CHARLES SYMES, PH.D.

THE subject which I have hurriedly chosen is a wide one; my notes contain thoughts as hurriedly strung together, but I trust they will lose nothing of their genuineness on that account. It is one which looked at by different individuals, or even the same individual, under different conditions, will necessarily appear very different, therefore I can only be responsible for depicting it as it appears from my own point of view.

Were I so disposed, I have not the time to search out and bring before you all the minor circumstances connected with the dawn of pharmaceutical history, neither will I bore you with statistics and figures to prove simple facts of which you have a general idea already in your minds. We must necessarily have some starting-point, and probably cannot do better than take the foundation of the Pharmaceutical Society for our commencement; doing so, we will, if you please, divide our subject under these heads—the immediate past, the present, and the immediate future.

The Immediate Past.—There are some still living amongst us who first moved in constituting the Pharmaceutical Society, others who joined it in its early days, and consequently became also its founders. Those who are desirous of going into the details of its history from the commencement will find them fully set forth in the pages of the *Pharmaceutical Journal.* Suffice it to say that a number of earnest men, desirous of seeing a better state of things than there existed, with a large-heartedness well worthy our emulation, gave their time and their money to bring about the desired results. Some of these men have passed away in comparative obscurity, but their work remains, and let us, who are reaping the reward of their labours, honour their memory, rather than as has been occasionally done, make disparaging remarks as to their professional skill and knowledge; they did the work that came to their lot to do, let us do the same.

At first a considerable amount of energy was thrown into the matter; brilliant and rapid progress was anticipated. But it soon became evident that however correct and good the object in view, the immediate results were over-estimated; that there was no room for the continual display o this great energy. The same lesson has constantly to be learnt over and over again by individuals, communities, and nations. Nature cannot be so easily pushed out of her course; matters of this kind will rarely proceed and become matured as rapidly as our wishes; in this particular the old maxim, "festina lente," prevailed, and it was over a quarter of a century before the hopes of the founders were realized.

It is true that in 1852 the Society got an Act of Parliament to confirm their charter of incorporation; but this only served to shut out from it many good and worthy men, who for reasons probably not known to themselves had not previously joined; the outsiders, as they were called, were in considerable majority, and jealousy gradually sprung up between these two bodies—a rival society being started. This society did some good of its kind; it gave this large outside majority a desire for organization, which the Pharmaceutical Society, from the very nature of its constitution at that time, could not do; and it finally treated with that Society for conditions on which, not only itself, but the whole trade should become one in certain common interests. We all remember how, amidst the strife of tongues, much written controversy, and after several failures, the Pharmacy Act was ultimately passed in 1868, and we were ushered into a new state of existence.

The Present.—Taking all things into consideration, the new Act is working as well as might be expected. It is true we still have cases of poisoning as of yore; and both magistrates and coroners occasionally censure chemists quite undeservedly, by threatening to fine them for not registering the sale of such articles as laudanum, etc. This latter error will become less frequent in course of time, when the Act is better understood by these dignitaries. But the poisoning cases, when they will cease, who can tell? Education is a subject which at present is engaging much attention, not only amongst the pharmaceutical body, but throughout the civilized world; and it sometimes appears as though we had none of the great men of talent living amongst us now as in years gone by. But reflection tells us that things have changed; that in the past ignorance—dark, black ignorance prevailed; and whatever talent existed this darkness formed a background from which it shone resplendent. In the present, education more generally prevails; the background is not nearly so dark; there is more half tone, and, consequently, our educational picture is not so bold or striking. In nations and also in communities, we can usually judge of general progress by educational progress; and no one looking at pharmacy as it is in the present day, and as it was thirty years ago, can doubt for a moment that we have considerably advanced. The large number of excellent books which have been published during that period in chemistry, pharmacy, botany, materia medica, etc.; the improvement in the purity of our drugs and chemicals, the better facilities for detecting adulteration, are evidence of this. We have the pharmaceutical establishment in Bloomsbury-square, with its extensive museums, library, and laboratories; also other schools of pharmacy, both metropolitan and provincial; we have the Pharmaceutical Conference holding its meetings in different parts of the country, for the purpose of interchange of thoughts, etc.; we have our provincial associations; and last, though not least, two excellent journals devoted to our interests.

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* Abstract of a discourse delivered at a meeting of the Liverpool Chemists' Association.

In the past a five or seven years' apprenticeship was often spent in mere drudgery instead of intellectual culture, but there is a growing tendency to substitute mechanical for bodily labour. I grant you, that some of those who were educated under difficulties turned out first-class men, but that goes for very little; might they not, with better facilities, have been still better men?

Then there are signs of decided improvement in shortening our hours of active labour in the business.

The Immediate Future.—I do not propose to enter the domain of prophecy, not even to suggest the possible position of pharmacy in the year 1900, but simply to make a few remarks as to certain progressive conditions and improvements which we might hope for and reasonably expect during the next few years.

Well, I have said there is a tendency to shorten the hours of active labour. Perhaps it might be thought I attach too much importance to this; but, has it not been a curse to this business for many years, a bar to enlightenment and progress, the spoiler of social and home comforts, and a barrier which impedes the progress of associations such as this? When will men of pharmacy merge their petty jealousies, forego their inordinate desire for gain, and regulate their hours of employment more in accordance with Nature's laws rather than according to the arbitrary and absurd ones which they have prescribed for themselves? I believe there is in every individual a certain amount of energy—different in different individuals, of course, but in all there is this energy, partly mental, partly physical, partly active, partly passive—and that a great portion, if not the whole of this active force, is transmutable. Just as a given quantity of motive power might be developed as heat, light, or electricity, so this active energy is capable of being put forth either as mental or physical force. If you exhaust all this active force in physical development, or if you squander or trifle it away, where do you find power to cultivate the mental capacity? You might draw, it is true, on the latent energy; but this done too often, health is impaired. I should like to see our hours of business nearer to those of the merchant at his office, say from nine to six at the most, and during those hours should like to see business done as a merchant does it. None of that important time should be lost, the amount of work accomplished by any one individual would be little less than if extended over the larger number of hours, but the expenditure of energy decidedly so.

Well, gentlemen, when the day arrives that this is accomplished, what a large amount of time and energy we shall have at our disposal, and how much might be expected from us! Surely there will then be no grounds for Dr. Attfield charging our students with *superficial cram.* Cram you always will have if you choose to call it so, but if what is crammed is retained so as to be useful, cram as much as you like. The Professor is doubtless correct when he says that the bulk of the students in the present day aim merely at passing the examinations, and do not study purely to gain knowledge. If we consider for a moment who they are that constitute the bulk of those presenting themselves for examination in the present day, we shall see that they entered the business never expecting to pass an examination at all. The present long hours of business only leave these young men very little time in which to prepare for the examinations. After they have done with these, we can still hope that some prosecute their studies for the love they bear towards them.

With all due deference to those who have been pushing forward educational schemes, it implies want of faith in the progressive condition of things which they have been instrumental in bringing about. There is a time to be active, and there is also a time to be *passive.* Two or three years hence, things will have approached nearer their proper level; then, and not till then, shall we be able to fairly judge of what is necessary to be done for education. We are told that competent men get plucked,—that incompetent men pass the examinations; and the only reply seems to be "that the time is too short to examine in." Well, why not give more? It is surely unfair to send a man away half examined, when he pays well for it.

I anticipate, too, the day is not far distant when we shall all more fully value our time. I could say much on this point, but my friend Mr. Delf so thoroughly exhausted the subject in a paper which he read before you some time since, that to add thereto would be superfluous. In the future, too, we can hope that some of the provincial associations will give us some better evidence of their usefulness. Liverpool is considered to stand amongst the first of these—but does it? Is there the same difficulty amongst other associations, in getting papers for the evening meetings? We have a good library; but (with a librarian none too well paid) it costs about fourpence per volume per annum for each that is circulated. We have an excellent museum; but it is a rare thing to find any one in it. A school of pharmacy; but where are the pupils? Are these signs of a healthy condition? Can we not hope for something better?

We could wish, too, that the Pharmaceutical Conference would make some real progress; that its numerical strength were not the chief evidence we have of its progressive condition. It publishes a good Year-Book, and I should be pleased to see its proceedings form a more important feature in that volume. Some of the papers read at the annual meetings are good, some are trash. Just fancy a man reading a paper for the purpose of explaining that whenever tinct. ferri perchlor. is ordered he always uses the liquor!

Finally we reach Bloomsbury-square. There, as I have said, we have a grand institution, and good professors, and at the head of all the Pharmaceutical Council.

You remember the Executive Committee of the Chemists' and Druggists' Society, and you also remember the old Pharmaceutical Council, embracing men whose names have become, if not household, certainly pharmacy words with us; men whose judgment we esteemed; men in whom we had confidence, that, whilst they were at the helm, the ship would sail safely. Now, I speak with all due deference to the present Council, but I feel that I am speaking the truth when I say that it too much resembles the Executive of the Chemists' and Druggists' Society—too little, the old Pharmaceutical Council. Do not misunderstand me. There were some good men in the former body; but, as a whole, they were loosely strung together; uncertain in their action; they did not represent pharmacy of the first class; and this I maintain a governing body like the Pharmaceutical Council ought to do.

ON December 13 an enthusiastic and influential meeting at the Guildhall passed resolutions strongly condemning the income-tax. It will require all Mr. Lowe's suavity and gentleness to keep the tax-payers in good temper through another session if he is resolved to stick to Schedule D.

NOTES OF NOVELTIES

BALDOCK'S AUREOLEINE.

WE must spare space for the mention of an article of great convenience to pharmacists, and which admirably nswers its purpose. The Aureoleine is made by Mr. J. H. aldock, of South Norwood, and is entirely a vegetable preparation. It is not intended for dying hair, for which urpose there is another preparation in existence of very milar name. The object of the Aureoleine is for colouring omades. One ounce of the liquid imparts a very satisfactory olden colour to two pounds of pomade. The convenience the article is manifest.

DUNBAR'S WHISKEY.

WE have been requested to examine Dunbar's Scotch whiskey, nd to place the result before our readers. This whiskey is specially brought under the notice of the medical profession on account of its purity, and also on account of the guarantee of the uniform percentage of alcohol which it contains. It is supplied in three strengths—45 per cent., 50 per cent., and 57 per cent. of alcohol in each respectively. The sample we have examined is perfectly pure, and we are informed by more competent authorities than ourselves, is of remarkably fine lavour.

PATENTS

[The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau & Co., Patent Agents, 4, South-st., Finsbury, London; 10, Rue de la Fidélité, Paris; and 33, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following :—

3160. W. T. Cooper, of Oxford-street. Improvements in preparing or making up medicated and other effervescing mixtures. Dated 24th October, 1872.
3232. W. T. Cooper, of Oxford-street. An improvement in the manufacture of lozenges. Dated 31st October, 1872.
3430. J. S. Pode, of Plympton, Devon. An improvement in infants' feeding bottles for regulating the flow of liquids. Dated 18th November, 1872.
3445. R. Hornby, of Marchmont-street. Improvements in heating fatty materials in combination with various kinds of pitch, alkalies, and oil; also in the treatment of animal, vegetable, and mineral oils for lubricating purposes. Dated 19th November, 1872.
3460. A. Morgan, of South Lambeth-road. An improved method for purifying and amalgamating gum resins, including Kauri gum. Dated 20th November, 1872.
3464. E. Hills, of Warsash, Southampton, and B. Biggs, of Laurence-Pountney-hill, London. Improvements in deodorizing and purifying sewage and other excrementitious matters, and in obtaining certain useful products therefrom. Dated 20th November, 1872.
3466. T. C. Selby, of Drummond-road, Bermondsey. A new shield for the protection of the chest and lungs of animals used for riding or draft purposes from inclement weather. Dated 20th November, 1872.
3473. C. W. and A. H. Harrison, both of High Holborn. Improvements in apparatus for charging or impregnating atmospheric air with vapour of hydro-carbon liquids. Dated 20th November, 1872.
3492. C. E. Wetton, of Cheltenham, Gloucester. Improvements in portable appliances in magneto therapeutics. Dated 22nd November, 1872.
3501. J. H. Player, of Birmingham. Improvements in utilizing waste products obtained in the manufacture of phosphorus, and in the manufacture of certain metallic compounds containing phosphorus. Dated 22nd November, 1872.
3529. D. Currov and J. Dewar, both of Edinburgh. Improvements in the filtration and purification of fluids, and in the manufacture of manure. Dated 25th November, 1872.
3587. W. Betts, of Wharf-road, City-road. An improved capsule and machinery for producing the same. Dated 28th November, 1872.
3591. H. J. F. H. Foveaux, of the Strand. An improved clinical thermometer. Dated 29th November, 1872.
3600. P. W. Seymour, of Battersea, Surrey. Improvements in magnetic therapeutic plasters. Dated 29th November, 1872.
3631. W. Bruce and H. Fourewe, of Birkenhead, Chester. Improvements in bottles or receptacles for containing aërated beverages, and in apparatus for charging the same. Dated 3rd December, 1872.
3670. H. Y. D. and T. W. Scott, both of Ealing. Improvements in the mode of and apparatus for preparing lime for the treatment of sewage. Dated 4th December, 1872.
3672. A. S. Owen, Newman's-court, Cornhill. Improved means for obtaining electric currents. Dated 4th December, 1872.
3685. F. M. Lyte, of Asnieres, France. A new apparatus for distilling, concentrating, and evaporating. Dated 5th December, 1872.
3687. R. S. Best, of Goole, Yorkshire. Improvements in the manufacture of the phosphates of soda and potash, and chloride of ammonium, also in the manufacture of chemical manures and alkalies. Dated 5th December, 1872.

Letters Patent have been issued for the following :—

1421. J. Robey, of Manchester. A new or improved filtering medium, suitable also as a disinfectant and deodorizer. Dated 10th May, 1872.
1616. J. H. Denuis, of Liverpool. Improvements in the treatment of copper precipitate and in the utilization of impurities contained therein. Dated 28th May, 1872
1690. W. Riddell, of Bishopsgate-street. Improvements in the manufacture of paper pulp from vegetable fibres and in apparatus therefor, which apparatus is also designed to be employed in making chloride of lime for bleaching pulp and in other similar processes. Dated 4th June, 1872.
1694. G. S. Fleming, of Oxford-street. Improvements in stoppers for bottles. Dated 5th June, 1872.
1742. C. A. Faure, of Lambeth. Improvements in the process or processes of applying electric currents to chemical decompositions and combinations, including the manufacture of alkalies. Dated 10th June, 1872.
1878. J. Tourre, of Avignon, France. Improvements in obtaining colouring matters derivable from madder, munject, and other allied roots. Dated 21st June, 1872.
1948. F. J. Cheesbrough, of Liverpool. Improvements in the process of manufacturing oil and oilcake from seeds, and in the machinery to be used therein. Dated 27th June, 1872.
2044. W. Weldon, of Putney. Improvements relating to the utilization of dilute chlorine. Dated 6th July, 1872.
2251. M. Mattson, of London. An improved apparatus for administering vaginal and other injections, and box for containing the same. Dated 27th July, 1872.
2254. J. Fletcher, of Portfield, near Chichester, Sussex. An improved eye cup, to be used in the operation of dry cupping the eye. Dated 29th July, 1872.
2621. H. Codd, of Camberwell, Surrey. Improvements in bottles to contain aërated liquids. Dated 3rd September, 1872.
2845. T. Walton, of Staines. Improvements in oxydizing oil and in machinery to be employed for that purpose. Dated 26th September, 1872.
2988. J. Young, of Kelly, Renfrow, North Britain. Improvements in heating liquors containing ammoniacal compounds in order to obtain products therefrom. Dated 10th October, 1872.
2996. J. R. S. Hayward, of Shirehampton, Gloucester. Improvements in the application of electricity to the cure of certain bodily ailments and in apparatus for the same. Dated 10th October, 1872.
3005. C. Lowe, of Reddish, Lancaster. Improvements in the treatment of coal gas tars, for the purpose of obtaining certain useful products therefrom. Dated 11th October, 1872.
3128. D. Jones and W. P. Wyatt, both of Clerkenwell. Improvements in portable and other hot air, vapour, shower, and medicated bath apparatus for curative and other purposes. Dated 23rd October, 1872.
3221. W. Darlow, of Canning-town, Essex. Improvements in portable magneto apparatus for curative and other purposes, and in the mode of applying the same. Dated 31st October, 1872.

Specifications published during the month :—

Postage 1d. each extra.

1872.

1047. W. E. Gedge. Feeding bottles. 8d.
1054. E. Sonstadt. Manufacture of iodide and bromide of potassium. 4d.
1133. J. R. Taber. Artificial breasts. 4d.
1136. A. V. Newton. Preserving animal and vegetable substances. 4d.
1140. B. J. B. Mills. Extracting oil, fat, or resin, etc. 8d.
1145. W. E. Newton. Distilling apparatus. 6d.
1171. J. Barrow and another. Utilizing saccharine syrups. 1s.
1173. S. and T. Hay. Feeding bottles. 6d.
1176. W. R. Lake. Treating animal and vegetable fats. 10d.
1201. L. Fontana. Substances for surgical and therapeutical application. 4d.
1240. H. Gahn. Cosmetics. 4d.
1243. S. W. Rich. Manufacture of sulphates. 4d.
1257. W. R. Lake. Treating phosphatic substances. 4d.
1258. M. Benson. Stockings for horses. 6d.
1267. H. J. Smith. Extracting metallic oxides. 4d.
1268. J. Young. Manufacture of carbonic acid. 4d.
1290. H. A. Bonneville. Medical injecting or irrigating apparatus. 8d.
1299. J. Bending. Apparatus for producing medicinal vapours. 10d.
1327. T. Christy, jun. Treating ammoniacal liquor, etc. 4d.
1373. T. J. Denne and another. Preserving meat. 4d.
1375. C. Viel. Washing fluid. 4d.
1404. J. Arnold. Enemas. 8d.
1437. J. V. P. Lagrange. Treating saccharine juices and syrups. 6d.
1442. W. Gossage. Manufacture of alkaline carbonates. 4d.
1456. W. Clark. Extracting anthracene, etc. 4d.
1492. T. Christy, jun., and another. Treating ammoniacal liquors. 6d.
1802. C. W. Smith. Extracting Indigo, etc. 4d.
2493. G. Haseltine. Electrical apparatus, for the cure of nervous affections. 6d.
2865. R. Veitch. Powder for the cure of corns. 4d.

ALL ABOUT PATENTS.*

FOR the encouragement of invention, civilized States have found it advisable to offer inventors a monopoly for a short term of years in the use of the novel machinery they create, and the unknown processes of manufacture they discover. Certain fees being paid, and certain formalities being complied with, the State guarantees that its Courts shall prevent the rest of the world, while the monopoly lasts, from taking advantage of the thought, labour, and money devoted by the inventor to the maturing of his idea, without having first obtained his express permission. The contract by which this guarantee is given is called a patent. All civilised countries, as we have said, have adopted the principle of a patent law, but they differ much in the term for which they grant protection to the patentee. In this country, in our dependencies and colonies, except Canada, the term is fourteen years. In Canada it is fifteen years; in the United States seventeen years; in Russia ten years; and in Denmark the term is arbitrary. Again, although Germany has a patent law, patents are rarely granted, and, when granted, are liable to be annulled at the caprice of the officials.

A patent taken out in our own country is of force all over the United Kingdom, the Channel Islands, and the Isle of Man, but does not extend, it must clearly be understood, to India or any of the Colonies. If the patentee wishes to secure protection in these, he must take out a fresh patent in each of them, and he must do so in most of them within one year after the home patent is obtained. A British patent may be taken out by any person, whether a British subject or a foreigner, in the name of the inventor or of any one else. The lowest cost is about £200, but this sum may be considerably exceeded. The fees paid to Government, indeed, are fixed, but agents' charges vary, of course, according to the nature of the invention, and also according as the application is opposed or not. And, again, in contested cases, personal attendance in London becomes necessary, which swells the expense still more. In unopposed cases personal attendance is not required. If the applicant for a patent is poor, or is doubtful of his ability to make it a pecuniary success, he may split up the term of fourteen years, into three periods, of three, four, and seven years respectively. By this means he avoids paying a large sum down at a time that may be very inconvenient to him, he reserves to himself the opportunity to throw up his patent if it does not succeed, and, if it does, he gets some return upon his original outlay before being called upon for a further advance. Should an inventor decide to patent at the beginning for only three years he secures the services of an experienced patent agent, if he is wise, who makes for him a "provisional application," for which he pays a Government fee of £10. Before the expiry of four months, he gives "notice to proceed," paying another fee of £6, and within five and a half months he "seals the patent," and pays £14. Assuming that the invention is one which is the proper subject of a patent, that it has not been already patented, and that the specifications and drawings are in perfect form, the patentee is now secure for three years. The official fees, as we see, amount to £30. There are to be added, however, the agents' fees. According to Messrs. Robertson, these fees rarely exceed £20, and on the average are about £15. The cost of a patent for the shortest period would thus appear to be about £45. Before the expiry of the three years the patentee is at liberty to secure a continuance of the patent for four years by paying about £53. And again, prior to the end of that term, a payment of about £100 will add seven years more to it. Thus, for an average expenditure of about £200, an inventor may secure the sole use of his invention within the United Kingdom to himself and his licensees for a term of fourteen years; an additional £30 will give him the same privilege in India; £45 each, or £135 altogether, will extend it to South Australia, New South Wales, and Queensland. Victoria, however, exacts £105; and £90 more will cover Canada. The other Colonies also demand fees, generally amounting to about £40, though sometimes higher. A patent runs in France for fifteen years at a cost of from £12 to £15 the first year, and £5 for every subsequent year. A single payment of £30 for seventeen years in the United States secures protection for seventeen years.

To the Attorney and to the Solicitor-General is committed the duty of deciding whether patents ought or ought not to be granted in particular cases. For this duty they were formerly paid by fees; but quite recently a change has been made in this respect. As our readers, doubtless, are aware, all officials at one time received fees. Gradually, however, the system has been abolished elsewhere, the two law officers of the Crown continuing to be almost the only great functionaries who were paid on the old and bad system. The present Government, however, decided to put an end to this anomaly. Accordingly, when Sir George Jessel accepted office, it was arranged that he was to receive a fixed salary in lieu of all fees. But Sir John Coleridge did not come under this regulation. It was not thought fair to apply to him a rule which was not in existence when he joined the Government. As long, therefore, as he continues to hold his present office, he will receive the fees that of old attached to it. Thus it happens that the patent fees, which used to be paid to the Solicitor-General, now go to the Treasury, while those of the Attorney-General do not. If patent agents were allowed to select the officer before whom their cases should be tried, it is possible that this arrangement might, in practice, be found objectionable. They would, very probably, argue that the one being paid for his trouble and the other not, it is in accordance with human nature that the former should wish to increase the number coming before him, and the latter to diminish those coming before him. And that, consequently, they would crowd to the Attorney-General, would take up an undue portion of his time, and, at the same time, inflict a loss on the Treasury by not equally distributing the fees. This, however, cannot happen; for the Amended Patent Act requires that the business of the Patent Office shall be equally divided between the two Law Officers of the Crown. The way in which this is done is as follows:—Every application for a patent is numbered, and the odd numbers are referred officially to the Attorney-General, the even numbers to the Solicitor-General. As this practice is continued under the new arrangement as to fees, it will be seen that no more than half the applications can be brought before the Attorney-General, however much the applicants may desire to bring more, and that, consequently, one-half the fees must be paid into the Treasury.

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* From the *Echo*.

CHEMICAL SOCIETY.

PROCEEDINGS of the Chemical Society, Thursday, 19th December, 1872.

Professor WILLIAMSON, F.R.S., Vice-President, in the Chair.

After the ordinary business of the Society had been transacted several interesting communications were read. The first, entitled "Analyses of Water of the river Mahanuddy," by Mr. G. Nicholson, gives the results of the author's examination, from which he finds that the water of this river contains less dissolved matter than that of any other river in India. The next paper, "Researches on he Polymerides of Morphine and their derivatives," by Mr. E. Ludwig Mayer and Dr. C. R. A. Wright, gives an account of the various derivatives obtained from morphine by acting on it with zinc chloride, hydrochloric acid, and sulphuric acid respectively, and also of the physiological properties of the compounds produced. Three communications by Dr. H. E. Armstrong, from the Laboratory of the London Institution, were then read. No. VIII. "Derivatives of B-dinitrophenol." No. IX. "Note on the Action of Bromine in presence of Iodine on Trinitrophenol (picric acid)." No. X. "Preliminary notice on Iodonitrophenol." The last paper, by Mr. C. E. Groves, was "On the Formation of Naphthaquinone by the direct Oxidation of Naphthalene," which the author effects by means of chromic anyhydride. The meeting was finally adjourned until Thursday, 16th January, when papers will be read "On Several vanadates of Thallium," by T. Carnelly; "On the Heptanes from Petroleum," by C. Schorlemmer; and "On Ethylamyl," by Mr. Grimshaw.

THE CHARGE FOR DRUGS.

From the "Globe," *December* 3, 1872.

A FEW days ago we in effect expressed an opinion that the charges for medicine are very frequently so exces- ve, that not only are the general public the victims of impo- ion, but the kindness of medical men in prescribing atuitously for the poor is often rendered abortive. This ct, as we pointed out, is really at the root of the hospital ut-patient difficulty. It is useless for medical practitioners advise and prescribe for the indigent sick if they are able procure what is prescribed only at ruinous prices; and at this is actually the case the results of an experiment ade within the past few days have, we think, fully esta- lished.

The experiment consisted in presenting a very simple pre- cription to a number of unsuspecting dispensers, and in the rst place merely inquiring the cost of making up the medi- ine. That having been given, and the mixture made up nd paid for, a query was added as to whether any reduction ould be made in the event of its being required by an invalid n very poor circumstances.

The first visit was to an establishment no great distance rom the Poultry, the second to a house near Lombard-street. At both those highly respectable shops 2s. 4d. was the price charged, and in answer to the appeal to their charity the first reduced the price to 1s. 6d. and the other to 1s. 10d. An establishment not far from Cheapside dispensed the same thing for 2s., and to the necessitous would charge 1s. 6d. From the City inquiry was carried eastward, and a visit paid to High-street, Whitechapel. Here the prescription was prepared for 1s. 6d., from which, however, no deduction could be made. Brick-lane, in the neighbourhood of Bethnal-green-road, was next called upon. At an establishment in this district the same thing was bought for 1s., and as a favour to the poor, the proprietor consented to charge 8d.

Leaving these poorer localities, the test was applied in the West. The first house, not 100 miles from Oxford-street-circus, charged 2s. 2d., but would take 1s. 3d. from a poor person. To the neighbourhood of Bond-street two visits were paid. On the first occasion 2s. was pronounced to be the price, and 1s. 6d. to the needy. This time a purchase was not made. A day or two after, the same person had the prescription prepared and paid 2s. 6d. This was also the sum charged near St. James's-street, where an offer was made to reduce it to 1s. 6d. An establishment within gunshot of Conduit-street, Bond-street, on two applications made by the same individual on different days, quoted 3s. as the price. On the first occasion they undertook to supply a needy invalid at 2s. On the second visit they were requested to prepare the medicine at 3s., but they apparently suspected that the applicant might be the necessitous poor person, and voluntarily reduced the figure to 2s. 6d. Near Hyde-park-corner 3s. was charged for making up the prescription. Finally, the test was presented at the stores of a co-operative society, and the charge was 1s. 2d.

Now it should be clearly understood that these prices were in every case obtained by the same person, and every care was taken to render the test scrupulously fair. To say nothing of the fact that we have here a difference represented by 8d. and 3s. for what ought to be the same article, when a respectable firm is contented to prepare a prescription for 2s., it may be fairly assumed that for this sum first-rate drugs can be dispensed by competent dispensers, and will yield a handsome profit. Out of eleven inquiries made, however, there are, it appears, no less than seven who are not satisfied with this handsome profit. In one case upwards of 7 per cent., in two cases nearly 17 per cent., in three cases 25 per cent., and in one case 50 per cent., is demanded in excess of it. This is assuming the fair selling price to be 2s. Judging, then, by the simple comparison of one druggist with another, we think we are justified in asserting that while there may be many houses from which the best of drugs are dispensed at a fair profit, there is at least a lamentable proportion of those whose charges are altogether unreasonable.

But we go further than this, and, judging by the list we have given, it may, we think, be questioned whether there are any druggists content with what ought to be regarded as a fair profit. This opinion will, we believe, be very generally shared by our readers when we state that the medicine purchased in each case consisted of 24 drops of pure sulphuric acid, 1½ oz. of syrup of poppies, and sufficient water to make up the mixture to 8 oz. To this were added two compound rhubarb pills. The mixture involved no nicety of dispensing, and the pills are such as are always kept in stock. The actual cost of the whole, including bottle, label, paper, string, sealing-wax, and pill-box, has been estimated for us by a competent authority to be barely more than fivepence. For this prescription we have prices running 8d., 1s., 1s. 2d., 1s. 6d., 2s., 2s. 2d., 2s. 4d., 2s. 6d., and 3s. In most other businesses we imagine that the man who bought an article for 5d. and sold it for 8d. would consider that he had every reason to be satisfied with his bargain. But what would be thought of the man who did this, and then claimed to have been actuated by sentiments of charity? And what are we to think of tradesmen who buy an article for 5d. and sell it for 1s. 6d., 1s. 10d., or 2s., and then claim credit for benevolence? When we see that even for the simplest mixtures people who go pleading their poverty, and, in some cases, taking their own bottles, are made to pay prices yielding profits ranging from 100 to 700 per cent., we cannot wonder that they eagerly avail themselves of opportunities of procuring medicine gratuitously. Indeed, so long as the present charges prevail it is clearly impossible for them to do otherwise. The quantity of medicine of which we have given prices would require to be purchased three times a week. Taking the lowest price we could discover, this would be a matter of 2s. a week, which, to a man earning 18s., would be a very serious item. The probability is, however, that he would not get it under at least 3s. a week. It is therefore from no disposition to impose upon the public, and it is not to be regarded as always indicative of a want of self-respect that even the decent poor apply to our hospitals in such numbers. It is simply that to obtain necessary medicine elsewhere is with them impossible.

Pharmacy.

CONDURANGO AGAIN.

Two Italian doctors (Giannazi and Bugalini) announce that Condurango is a poison. They state that ten grammes are sufficient to kill a dog. Tetanic paroxysms, like those produced by strychnine, follow the exhibition of this drug, and they therefore suggest, that if it be useless in other respects, it may be of value in cases of paralysis, and other diseases requiring tetanising influences, as a milder remedy than strychnine.

RASPBERRY SYRUP.

The German Pharmacopœia gives an excellent test for the genuineness of raspberry syrup. If one volume of the latter is mixed with half a volume of pure nitric acid (25 per cent.), the fine red colour of the syrup must not change to yellow, otherwise the syrup owes its colour to some dyestuff, which has nothing to do with raspberry fruits. A syrup which contained only a small quantity of artificial colouring matter remained 24 hours unchanged, and only after this time showed a yellow colour; while genuine syrup, when treated with nitric acid, even after three days' standing, showed no change of colour. It is indispensable that the experimenter should be very careful as to the measurement of the volumes. Dr. Hager states besides, that syrup coloured with aniline becomes colourless when treated in this manner with nitric acid.

REACTIONS WITH IODINE.

From observations communicated by Mr. Krause, it becomes evident that iodine is more or less soluble in many mineral and organic acids; 150 c.c. of concentrated sulphuric acid dissolve about 1 gramme of iodine with vivid red colour. After some time a finely divided crystalline powder of iodine is deposited, and the solution becomes somewhat fainter in colour. Nitric acid shows the same reaction; hydrochloric acid reacts differently; it dissolves large quantities of iodine with dark red colour, and does not throw down any deposit, even after a length of time. Phosphoric acid dissolves iodine slowly in the cold, quicker when heated;

colour yellow-red. Acetic, citric, tartaric acid act in the same manner. A solution of iodine in sulphuric acid assumes no blue colour when tested with starch-paste. This is very remarkable, as this fact cannot be explained, as might be supposed by the changes effected by the action of the acid on the starch; for no blue colouring takes place even when starch-paste in excess is present. The same occurs with nitric acid. Hydrochloric acid again is different; the solution prepared in the cold becomes immediately blue, when tested with starch-paste. The weaker acids, as phosphoric, acetic, citric, tartaric, do not prevent the usual reaction, but in all cases the presence of iodine is proved by sulphuret of carbon.

Pill Coating.

BY T. HAFFENDEN.

Many expedients have been tried and suggested for coating pills. The first requisite, of course, is a perfectly round, dry, hard pill, that will not run, and then to secure a coating, tasteless, elegant in appearance, insoluble for a moment or two in the mouth, and yet sufficiently soluble to allow the active ingredients of the pill to commence operations as soon as it reaches its post of duty.

Gilding and silvering are very common and useful modes of disguise; the great objection is that if kept any time, they are so liable to tarnish; besides, there is a strong, and I must own well-founded objection, by many to a pill which inwardly or outwardly has any metallic ingredient in its composition.

There is a mode of coating recommended by some, viz., sticking the pill on the point of a needle, dipping in a solution of gelatine or isinglass, and sticking the other end of the needle into a pad, for the pill to drain and dry. I have never tried this process myself; even if successful which is possible, it involved too much time and finessing for ordinary purposes.

I frequently use myself the solution composed of

Balsam of Tolu...	1 part.
Sulphuric Ether	4 parts.
M.	

and am very successful in getting a tasteless varnish or coating, which disguises the taste perfectly, but I find sometimes the dark natural colour of the pill, as seen through the varnish, is objected to; this, to some extent, I have obviated by rolling the pills, before the varnish is dry, in powdered French chalk. I find, after a few times to acquire the necessary manipulative dexterity, I can get a good-looking covering on "the pill." One note here: the tolu used for the solution, and which seems to answer best, is that which has been used in preparing syrup of tolu, so that I use what I formerly threw away and the methylated ether answers very well for the purpose, reducing the cost of materials to a mere fraction.

Many chemists used to get their pills coated with sugar in the same way as sugar plums, by wholesale confectioners; I believe confectioners now decline to do it; at all events, the old and respectable firm with which I do business, though most obliging on all othther points, totally decline helping me here.

Another method I have fairly succeeded with, has been to mix powdered tragacanth, prmcipitated chalk, and powdered French chalk together, damp the surface of the pills, get them nicely coated with the powders, transfer them to a hair sieve and agitats the mover the steam of boiling water; I find that steam sets, the gum tragacanth, and forms a nice coating, which fulfils my requisites, of pearly appearance, tastelessness, sufficient insolubility, and is besides not brittle, liable to chip off. It requires to be done with great care, otherwise in drying the coating cracks away and is unserviceable. I have turned out a nice sample of pills coated in this way, after being previously varnished and made waterproof with the tolu solution. I have tried unsuccessfully to introduce plaster of Paris into the composition of the coating, but, owing to its greediness and great fondness for water, have not been successful.

I am now turning my attention to the use of yolk of egg to brush the pills over with, and then roll them in French chalk, or powdered starch and French chalk mixed. I also fancy something may be done with glue made liquid, after the French fashion, with nitric acid, and some combination of powders.

Of course, the powders used could, with cochineal, saffron, etc., be variously coloured if wished, according to the taste of patient or dispenser.

CERESINE.

A by product from the manufacture of paraffin from ozokerit has been introduced in Vienna, and is said to answer well as a substitute for wax in many pharmaceutical operations. The crude ceresine is left when the ozokerit has been purified for the purpose named. It is treated with sulphuric and sulphurous acids, and then with alkalies. It is described as a white, semi-transparent, opaline body, void of taste and smell, fusing at from 61° to 63° (Cent.), sp. gr. ·880, insoluble in water, soluble in alcohol, not saponified by alkalies.

TESTING OLIVE OIL.

Professor Palmieri, of Naples, the gallant observer who, it will be remembered, enjoyed himself on the slopes of Vesuvius during a recent long-continued eruption, has lately constructed an electrical apparatus of great delicacy and ingenuity, the object of which is to detect the admixture of other oils with that of the pure olive. The instrument is founded on the fact of the variability in the powers of conduction possessed by the various oils, olive being lowest in the scale. The wires of a battery are brought to a small elongated vessel containing the oil to be examined, and an electrometer being attached, the degree of conductivity can be read off on a scale. The instrument, it is said, can detect any of the usual adulterants with the utmost nicety. It has also been applied to the detection of woollen or cotton fibres in silk fabrics with equal success.

ADULTERATION OF CREAM OF TARTAR.

Mr. J. M. Merrick, B.Sc. of Boston, U.S., declares in the *American Chemist* that he examined some cream of tartar for a drug broker of that city, and found it to contain *seventy-seven per cent. of alum.*

EDIBLE EARTHS.

The *American Chemist* translates from a French journal an analysis which has been published by a German doctor (Schmidt) of the so-called edible earths from Lapland and Persia.

One hundred parts of the air-dried powder from the coast of the White Sea were found to contain:—

Water given off at 100° C.	0·260
Given off at low red heat	0·835
Alumina	40·797
Ferric oxide	0·310
Magnesia	0·618
Lime	traces
Soda	1·829
Potassa	9·845
Silicic acid, trace fluorine and loss ...	45·506

The substance appears to be a potash mica, finely comminuted. The natives mix it with their flour with which they make bread.

The Persian edible earth, called Gheli Giveh, contains:—

Magnesic carbonate	66·963
Calcic carbonate	23.634
Sodium chloride	3·542
Sodic sulphate	0·293
Sodic carbonate	0·598
Magnesic hydrate	1·311
Ferric oxide	0·092
Alumina	0·227
Silicic acid...	0·765
Water combined at 120°	1·153
Hydroscopic moisture	1·422

GLYCERATE OF ASSAFŒTIDA.

In the *American Journal of Pharmacy*, Alonzo Robbins suggests the following formula for preparing a milk of assafœtida:—

R.	Assafœtida	2 troy ounces
	Glycerine, q. s., ft.	8 fluid ounces.

Select the best assafœtida and cut it quite fine; put it into an eight-ounce bottle, and add five fluid ounces of glycerine; cork well and suspend in a can of water, which place on the stove where the heat will be very moderate; leave it to re in so a day or two, shaking the bottle frequently; then st n through a coarse cloth, and return the residue to the b e with three fluid ounces of glycerine; let stand as b re, and then strain into that first obtained, and make u o eight fluid ounces by adding glycerine.

ne fluid drachm of this added to seven drachms of w r will make milk of assafœtida containing the proper q ntity of the drug.

ARSENICAL POISONING.

omebody in America has discovered that the paper in ch they wrap up lollipops in that country is impregnated h arsenic; but worse than that, somebody in Germany detected the almost omnipresent foe in carpets, red as l as green. An invitation to a little dance at home may, refore, in future be regarded as a deliberate attempt at rder.

PEPSINE WINE FOR INFANTS.

By W. J. Cummins, M.D.

THERE is nothing, of course, like a good breast of milk for an infant, if it can be had; and in "the good old mes," when the peasantry and small farmers lived on tatoes and milk, without stimulating their nerves with rong tea, nor their brains with penny-a-liner's words, ere was an ample field for the selection of a foster parent; t now even when the *rara avis*, a good nurse, is procured, e is so independent, and knows her power so well, that ny caprice must be humoured, and she is always ready throw up her situation or neglect her charge. A wet urse is, then, an admitted torment, and a balance struck etween its advantage and disadvantage is generally against he former.

Artificial feeding by bottle is a great improvement upon he old system of spoon-feeding, as the act of suckling timulates the salivary glands and insures due in-salivation, which is an important part of infantile digestion. With such an aid the stomach of most human infants is vigorous enough to fall into the way of digesting cow's milk, properly diluted, and mixed with sugar and cream to assimilate the proportions of its constituents to human milk; but besides the relative excess of casein and albumen contained in cow's milk when compared with human, the coagulum of the latter is "soft, flocculent, and not so thoroughly separated from the other elements of the fluid as the firm, hard curd of cow's milk is from the whey in which it floats." (West.)

When we reflect that the digestive organs of the human infant are found to digest human milk, and the force of its gastric juice proportioned to the solution of its soft flocculent coagulum, we can understand why the solvent power of its gastric juice is sometimes unequal to redigesting the firm curd of cow's milk. When such is the case, acetous fermentation is quickly set up; offensive gases distend the stomach and taint the breath, vomiting and diarrhœa set in, and in process of time the little patient sinks into a miserable state of marasmus, and dies. The remedy for this state of things is simple, for although we cannot change the elementary composition of the milk we have to use, we can introduce into the infant's stomach a digestive power proportioned to the food it has to use—the organic principle of digestion taken from the stomach of the calf.

It is now many years since I first applied this simple theory to practice in the case of one of my own children, who, when about three or four months old, was reduced to a condition of marasmus by vomiting and diarrhœa due to imperfect digestion of cow's milk. I ordered him fifteen or twenty drops of pepsine wine, to be given immediately before and after each meal. Soon after commencing it he began to improve, and by degrees all bad symptoms vanished, and nutrition was quite restored.

The pepsine was continued until he was nearly two years old, and he throve at least as well as if he had been wet-nursed; other treatment, of course, preaided and accompanied the use of pepsine, but it was not until the latter was commenced that improvement took place.

Shortly after, a child born in England, and bottle-fed, was brought over to this country when about six months old; he was suffering from infantile dyspepsia, and was pining away into a listless, apathetic state, quite indifferent to surrounding objects, and appearing as if he would lapse into idiocy from mal-nutrition of the nervous centers. I immediately ordered him pepsine wine, which produced such beneficial effects, that after it had been continued about twelve months, he had become a bright, intelligent, well-nourished child.

Since then I have never recommended a wet nurse, and have used pepsine wine largely in dispensary, hospital, and private practice, and have seen many apparently hopeless cases recover under its use.—*Dublin Journal of Medical Science, Feb.*

THE METHYL AND ETHYL SERIES OF ANÆSTHETICS.

By Dr. George Archbold.

IN view of the frequent fatal accidents which have resulted from the employment of chloroform, it is a matter of intense medical interest to inquire into the value of other agents for producing anæsthesia. We may name three proposed substitutes from among which there is good reason to believe the anæsthetic of the future will be selected.

Methylene bichloride was introduced as a general anæsthetic in 1867, by Dr. Richardson, F.R.S., and it has been described by him and by others who have employed it as more rapid in its action on the system than chloroform. It is now largely used instead of the latter compound in nearly all parts of the world. When pure it is a light volatile liquid, pleasant to inhale, having an odour somewhat similar to chloroform, but more agreeable. Its chemical composition is CH_2Cl_2, and its boiling point is 31° C. and 88° Fahr.; its sp. gr. is 1·340, and vapour density 42·5, compared with hydrogen. It may be prepared by the action of chlorine on methyl chloride, aided by sunshine; this process, however, is dangerous and inconvenient, and has never come into general use. Hitherto it has been prepared from chloroform by the action of nascent hydrogen on that compound. The chloroform is mixed with alcohol, zinc, and sulphuric acid, and an atom of chlorine in the chloroform ($CHCl_3$) is replaced by one of hydrogen, forming CH_2Cl_2, *Methylene Bichloride.*

The objections to this process are—1st, that the product is invariably mixed with alcohol and methyl chloride; and 2nd, it is a very expensive method. Methylene bichloride, contaminated with chloride of methyl and alcohol, is likely to be a dangerous body for the reason that the vapour densities of these bodies vary so considerably. It has been proved that the system becomes affected by one after another, commencing with the lighter vapour. It was on these grounds that the "Vienna mixture" (a compound of chloroform and ether) fell into disuse, the ether being six times more volatile than the chloroform. (See *Lancet*, p. 829, Dec. 7th, 1872.) In working on methylene bichloride on a large scale, I have found the only process which yielded a product of absolute purity was to prepare it direct from methyl alcohol (CH_4O). By this process, too, it can be obtained for nearly the same cost as chloroform. From twenty gallons of CH_4O I have obtained nearly 80 lbs. of pure CH_2Cl_2. The presence of the chloride in any sample of methylene bichloride can be readily detected by agitating some of the liquid in a vial with an equal quantity of water. Methylene chloride if present, will rise to the surface as a white film.

Methylene Ether—Bichloride of Methylene and Ethyl $(C_2H_5)_2CH_2Cl_2$.—This compound was first discovered and introduced by Dr. Richardson, F.R.S. It is a mixture of two parts of methylene bichloride and one of absolute ether, having a specific gravity of 1·100. He found it to be a very safe anæsthetic, "scarcely second to the safest he had ever experimented on, viz., methylic ether gas," and he found that the physiological action of the methylene was favourably modified by the ether. (*Medical Times and Gazette*, Nov. 23, 1872.) A short time ago, however, he suggested the use of an extra light æthylic ether used in the same proportions, which when distilled over calcium chloride had a sp. gr. of 1·000.*

It is a light, volatile liquid, having a somewhat sweet and pleasant odour, and is very agreeable to inhale; its boiling point is 84° Fahr. It is quick in its action, and Dr. Richardson says it is one of the safest anæsthetics he ever used. It has been found useful in dental and opthalmic surgery, and owing to its great conveniences may supersede nitrous oxide gas. The average quantity required to produce good anæsthesia is six fluid drachms.

Light Æthylic Ether. $(C_2H_5)_2O$.—This is an extra light ether, specially prepared for inhalation and producing local anæsthesia. It is a colourless volatile liquid of a pleasant odour, agreeable to inhale. It has a sp. gr. of ·700, and boiling point of 75°. It boils when poured into the hand, producing local insensibility instantaneously.

ON GREY HAIR.

(*Translated from the German of Dr. Pincus.*)

COMMON observation teaches that, at a certain stage of human development, the hair usually turns grey. In all ordinary circumstances this is preceded by other changes peculiar to age. Grey hair is then natural, and is in harmony with the course of human life; the old man does not look upon it as an evil, and by common consent it is considered worthy of honour. But a perfectly natural development of this feature is exceedingly rare, and, with the change of colour there often comes another manifestation, held in less honour—namely, a decrease in length and thickness, which, like other chronic diseases of the hair, shows itself to be progressive in its nature. Either a single hair in each circle loses its original dimensions, or every hair is thus affected in a few circles only; the first results in a general thinning of the hair, the second in baldness. Sometimes both processes are observed together.

In the early history of medicine it was believed that the change of colour took place in those portions of the hair which had been longest formed; it was looked upon almost as continuous and unchangeable, like the nails; the constant waste and separation were hardly considered; no one supposed that a new hair could be grey, and there were various opinions as to whether the bleaching process first began at the point of the hair or at its root, or whether it simultaneously attacked its entire length. In the present century it has been firmly maintained that coloured hair never turns white, but that it falls out, and is replaced by a more venerable-looking growth; and it is also held that the change comes only in the ordinary course.

Amongst these different opinions we can come to a decision only by examining the cast-off hair, by subjecting grey hair to microscopic research, and by careful observation of hair still in its vigour. It is against all unprejudiced observation to suppose that the colouring matter once imprisoned in the hair can discharge itself; certainly it is easy to destroy the colour by the use of chlorine, for treated in this manner dark hair becomes perfectly colourless, but that any substance similar to this forms in the skin and enters the hair has not yet been shown. In my opinion it is a fact that where a microscopical examination of hair recently taken from the body finds no colouring matter it has never existed.

But there is another possibility; there have been noticed at least two cases of peculiar formation of the hair; one forty years ago in Greiswald, the other two years since in London. Both were young men, whose hair, in tolerably regular proportions, was white and coloured. Single hairs were coloured in their own length; none were wholly white; the greater part showed a bright ring, the next portion was dark, then white again, and so on. Amongst animals similarly marked hair is often found, but among men it is of very rare occurrence indeed; at least, the two cases above mentioned are all that have come to light, and a microscopic examination proved them to be essentially different from the case of animals. Many have tested this remarkable phenomenon, and, through the kindness of an honoured colleague, I have two hairs from the second case in my possession, and in every instance with the same result; in the white portions the colouring matter is present, but makes no impression upon the eye of the observer, inasmuch as the external coating of the hair is loosened and a number of air vessels are interposed, which, lying one over another in various positions, reflect the light so powerfully that it does not reach the colouring matter beneath, and in this way appears white to the beholder.

These observations led to the thought that possibly the change of colour in the hair of the aged might be the result of a similar cause, and that perhaps the sudden transition from dark to white might be explained in a similar manner.

It is well known that under the influence of extraordinary emotions the hair of some persons has, in the course of a few days or in a single night, been entirely changed. A prominent example is that of Marie Antoinette: after she was condemned to death, it was found that in the course of a few hours or days her hair had turned grey. A short time ago the following instance came under the notice of a physician in Hamburg. During the overflow of the Elbe a particularly constructed cellar-dwelling was inundated. It was inhabited by a middle-aged man and his little son, who, after a severe sickness, was in the deep sleep of convalescence. In the excitement of the sudden flood no one thought of the occupants of the cellar. The water constantly rose higher, and though the father sat on the bed with the boy in his arms, it reached his knees. The room was so low that he could not stand upright, and the flood every moment reached a higher point, and at last he gave up himself and his child for lost. But at the last moment help came, and it was found that the anguish of a double death had during the night changed the dark hair of the father to grey. Unfortunately the physician did not subject it to a microscopical examination. One such examination has, however, come under my notice. It was in the case of a young man whose hair during the excitement of *delirium tremens* had turned grey. The microscope showed the presence of the colouring matter, but the hair was found to be separated and filled with air, precisely in the same manner as in the two cases quoted above.

These observations, however, though corresponding to the demands of science, do not remove the principal objection by which they have been met. It has been said that, in these instances, grey hair might have already existed, and that the unpleasant fact might have been concealed by the use of some colouring matter which they had now either no opportunity or no desire to apply, or that when they were overtaken by extraordinary events, and their grey hair was suddenly discovered, they found it convenient to ascribe it to their intense emotions.

It cannot be proved that this is mere conjecture; in none of the cases mentioned was the hair subjected to microscopical examination before the occurrence of the events which are supposed to have accomplished its change, and we are dependent upon the testimony of the parties concerned. But purely subjective evidence cannot, in a case where a little deception would not be thought improper, be accepted as a basis for the scientific attestation of a disputed fact.

If such a sudden change of mature hair is possible, it is certain that it is of very rare occurrence, and from my own experience, often repeated, I may point out a source of error. If a man has lost his wife after several weeks' sickness, or a mother a promising son, or a merchant, by an unexpected bankruptcy, sees not only his fortune but his commercial honour placed in danger, and has to endure for weeks the greatest anxiety, it often happens that the disturbance of the general system reaches the hair, and that portion of it which is formed during this period lacks colouring matter. Friends and acquaintances say "his hair has become grey!" Yet if we attentively examine it we find that only those portions have changed which are near the skin. In such cases, I have never seen a single hair changed in its whole length, or at any distance from the skin, and under the microscope I have invariably found that from the white portions, the colouring matter has been absent.

In my opinion, this interesting question stands thus:—There is not a single case in which it is proved beyond question, that coloured hair in its whole extent, or even in a portion of it, has become white. The discoloration, so far as close observation reaches, is the result of that portion last grown being formed without colour, or of the falling out of the dark hair and its being replaced by grey. That there is any other source of grey hair is not sustained by a single undisputed case, and if I am asked, as I have often been, whether I believe in sudden changes of the hair, I reply that in the sphere of physical science, we may not say that we believe or that we do not; we should observe and examine that we may attain to knowledge and truth.

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* By condensation, a new product being formed, having the above chemical composition.

The question is to be solved only by observation, and I trust that the readers of this paper will become interested in the inquiry and observe for themselves, without prejudice or any preconceived conclusions.

The possibility of mature hair becoming grey certainly cannot be denied, and a communication now lies before me which deserves great attention. An intelligent French observer, Brown-Sequard, reports as follows:—One morning he found a few grey hairs in his dark beard; the discovery surprised him, and in order accurately to observe the process, he carefully removed them. The next day he found others in the immediate neighbourhood; he removed these also, but notwithstanding, the phenomenon was repeated on the following morning. Unfortunately, though the information comes from a trustworthy source, it does not answer to the demands of exact scientific knowledge, for it fails to record the length of the hair, or to give the result of a microscopic examination. If, as in such a case I suppose, the colouring matter were wanting, we might from analogy, conclude that the hair of the head may possibly undergo a similar change. More it would hardly be safe to say, for there is a difference in construction between the beard and the hair of the head.

With reference to the premature bleaching of the natural covering, the introduction of atmospheric air has but little importance. In all such cases, I have found the absence more or less of colouring matter.

I have prepared two tables, one referring to a case in which the condition of the hair was simply that of turning grey, the other to a case where disease was superadded. The tables show the loss of hair in each case, and an attentive consideration of the figures will give the reader a clear insight into the phenomenon of premature grey hair.

In order to obtain reliable knowledge of everything connected with the hair, our observation should be directed to the uncut hair of females, since it is only then that we can watch the whole course of its development, and this is what is necessary if we are to avoid false conclusions. The number in the second column of the tables indicate the percentage of the opposite totals.

LOSS OF HAIR IN THREE DAYS.

	A Lady of 60, Hair turning Grey.		A Lady of 60, turning Grey; hair also diseased	
	Hairs.	Per cent.	Hairs.	Per cent.
Total Loss..	451	..	438	..
1. Hairs from 1 to 2 inches	38	8[*]	157	36
" 2 to 6 "	153	34	175	40
" above 6 " .. .	260	58	106	24
2. Amongst the whole, with distinct points	205	45[†]	324	74
Amongst these, from 1 to 2 inches	20	53[‡]	133	85
" " " 2 to 6 "	87	57	139	80
" " above 6 "	93	38	52	49
3. Amongst the whole, strong hair..	207	46	171	39
Amongst these, from 1 to 2 inches	13	6	45	26
" " " 2 to 6 "	36	17	47	28
" " above 6 "	158	76	79	46
Hairs of middle strength	109	24	138	31
Among these, from ½ in. to 2 "	16	15	41	30
" " " 2 to 6 "	30	27	72	52
" " above 6 "	63	58	25	18
Fine Hairs	135	30	129	30
Among these, from ½ in. to 2 "	9	7	74	58
" " " 2 to 6 "	91	68	53	41
" " above 6 "	35	25	2	1

[*] That is, 8 per cent. of the total loss.

[†] 45 per cent. of the total loss.

[‡] 53 per cent. of the hairs between 1 in. and 2 in. (38.)

Most readers will be surprised to find that the first lady whose hair was sound lost 451, while the second, whose hair was in an unhealthy state, only lost 438. Upon this I may remark, and that with reference to an erroneous view often expressed, that the smaller number of the total loss of the second lady is not to be explained by saying that in consequence of disease she had less hair than formerly, or than the first lady. In the quality of hair there was no difference; but that of the second seemed thinner, for a considerable number of single hairs had been lost. I must repeat what I said before, that it is not the absolute number of falling hairs that shows the existence of chronic disease, but the quality of the same. If in its falling out it still retains a distinct point, it is a proof of the original firmness of its roots. It was so with the second lady, 74 per cent. of her hair retained its points; while with the first, only 45 per cent. was in this condition. The greatest difference shows itself with the short hairs, namely, 85 and 53 per cent.; while with the long hair, the difference was less, for the original cause of weakness had been longer in operation.

The existence of this diseased condition shows itself by two symptoms—from the great number of short hairs, 76 per cent. of the total loss, with the first lady only 42 per cent., and from the smallness of the diameter. The normal strength of the hair in the case of the first lady was 46 per cent., in the case of the second 39 per cent. The fine hair was in both cases alike, 30 per cent., but in the second case, the larger half, 58 per cent., was short. Fineness and shortness not being the result of natural conditions, like that to be found near the face and neck, but of disease. In the first case such hair was only 7 per cent., and 25 per cent. reached a length above six inches; while in the second it only reached two inches.

With regard to the loss of hair so far as it concerns our present point, the following table is instructive.

	Loss of hair by first lady during three days.		Loss of hair by second lady during four days.	
	Hairs.	Per cent.	Hairs.	Per cent.
Total Loss..	437	..	514	..
a. All white	138	31	53	10
From 1 to 2 inches	9	7	10	19
,, 2 to 6 ,, ...	43	31	34	64
Above 6 ,, ...	86	62	9	17
b. The root only white	34	8	7	1·3
From 2 to 6 inches	3	..	..	..
Above 6 ,, ...	31	..	7	..
c. The point only white	7	1·6	4	0·8
From 2 to 6 inches	1	..	4	..
Above 6 ,, ...	6	..	..	..
d. Point and root white	3	0·7	..	..
e. Middle only white	3	0·7	..	..
f. Several alternations of colour ..	1	0·23	..	..

This table shows that among the hair partly or wholly white, the larger proportion was white in its whole length, and under the microscope showed almost an entire absence of colouring matter, thus leaving not the slightest doubt that it had taken the place of hair originally coloured, and had been white from the commencement of its growth.

A small part was coloured at the point and downwards to the root, the latter only being white. When examined under the microscope, the root was found to contain very little colouring matter, showing beyond doubt, that the hair-forming cell had during the growth of the same hair lost its power of producing colouring matter.

A still smaller proportion had the point white, the rest being coloured, and in the white part the colouring matter was found wanting.

Very rarely did it happen that point and root were white and the middle part coloured, or that the middle was white and the two extremes coloured; and only once have I observed a hair thus marked at intervals. It was twenty-four inches long; three inches from the point were white, the next nine inches were dark, then came five inches white, four inches more were dark, and the end was lighter, though still a little coloured. In all these cases the colouring matter was wanting in the light parts. It is evident therefore that such matter was sometimes absent at the commencement of growth, and during its progress; and that, on the other hand, it was sometimes present.

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THE *GLOBE* ON DRUGGISTS.

IT is becoming quite the usual thing for our daily papers to keep "specials" on their staff, whose duty it is to seek out and report anything sensational or out of the common way; and it would seem, too, that when a legitimate subject is not forthcoming, any other can be pressed into the service, if the "special" has only a little ingenuity. Mr. James Gordon Bennett and Mr. Stanley have, to use an expressive phrase, taken the shine out of all our English newspapers for a long time to come, by the conception and execution of the Livingstone Relief Expedition, and the rest of the daily press throughout the world comes limping along in a very weak way when their performances are compared with the *Herald's* exploit. However, we must take such narratives as we can get, and be thankful for "A Supper with Ned Wright," "Christmas Eve at Blisterchicks," and "Among the Dorsetshire Labourers;" but it is something less than pitiable when we see the poor old *Globe* coming into the race, apparently with some notion of emulating the performances of its more healthy brothers, the *Telegraph* and *Daily News*.

Selecting a "special," whose ideas seemed to run no higher than the sale of a pound of sixpenny sugar, and who was not honest enough to ask for enlightenment from some one who could have informed him, they rigged him out as an amateur out-patient, and set him to tramp London from east to west, gathering bottles of medicine from the various chemists' shops as he went along. By this means he made the somewhat stale discovery that prices are higher at Hyde Park Corner than in Brick Lane, Whitechapel. But this was not the only point of his programme. After getting his medicine, he tells us, "a query was added as to whether any reduction could be made in the event of its being required by an invalid in poor circumstances." This he said, not because he cared for the poor, but because he was representing the *Globe*, and had to get an article ready for its pages. The query, however, was not put in quite such an innocent form as it appears. Most certainly, the "unsuspecting dispensers" were led to believe that this amateur was speaking for some poor sick relative, for they would never have given him the information he publishes merely to satisfy a strange customer's idle curiosity. In other words, he managed by a false representation to elicit, *for the purpose of publication*, some information of an essentially private character. This we mention, merely to indicate the standard of morality which passes muster on the *Globe* staff, when a sensation is necessary. We by no means pretend that it is any answer at all to the charge brought against chemists and druggists, which, if formulated, would be nothing more nor less than an indictment of systematic robbery. We must express our surprise that the editor of the *Globe*, and of the *Times* (in which paper the article was reproduced) should have admitted an article into their papers so seriously injurious to the reputation of a class hitherto considered respectable, without inquiry or consideration as to whether they were presenting facts in a light which could, by any means, be regarded as fair. There can be little doubt that the publication of an article reflecting in a similar manner on the character of an *individual* would have rendered the publishers subject to heavy damages for libel, their solicitude for the poor notwithstanding.

It is almost superfluous in these columns to reply to the insulting charge at all, because the answer is so apparent to all our readers. A dispenser bases his charge for preparing prescriptions, not solely by reckoning the value of the drugs contained in the medicine (though that may be, and often is, an element in his calculations), but on the ground that he has a fair right to demand a fee for his professional skill, which he has attained at considerable expenditure of money and study. Whether he over-estimates the value of that skill or not is another question altogether, and one which quite evidently is not within the range of the *Globe* writer's present knowledge to discuss. But he probably has sense enough to understand that he himself is not paid for his work by reckoning a percentage on the writing materials in which he has invested. His brains are supposed to count for something. This will seem to him rational enough, but he will perhaps still dispute the proposition that other people's brain-work may also have its value. The prescription in question was, as we have said, a very simple one—so of course are many others that come into the daily work of the chemist; but just the same might be said of the majority of the cases which come before the physician. But the physician is not expected to reduce his charge when the case is easy, he is simply expected to exercise his skill and judgment, and the patient is quite willing to pay his fee.

The introduction of an attack on chemists' charity is an impertinence on the part of this writer, which is hardly worth notice. As a class, we venture to assert that chemists are as honourably distinguished for charitable deeds as any other body in proportion to their means. We respect a physician who differentiates his fees according to the means of his patients, and we cannot understand the bearishness which should calculate how much lower still he might sink his price. There is no pretence of charity in charging lower prices to the poor, and most certainly we will not admit the right of the *Globe* to dictate to us as to how and when we shall exercise this virtue.

Chemists might decline to enter into all this argument at all, and claim that they must live; to which our contemporaries would probably reply in the words of Talleyrand, "Je ne vois par la necessité." But this would be dangerous ground for the *Globe*. Why should that journal prolong its existence, and help to make night hideous, while there are several other evening papers of far greater ability than it can boast? Why does the *Globe* make any charge for advertisements, more than a trifling percentage on the cost of printing them? And finally, why have the proprietors of the *Globe* the shameless audacity to charge a penny for their evening effort, while the palpable fact is before us, that the *Echo* can be had with as much news, and certainly no worse literature, for exactly half that sum?

PATERNAL LEGISLATION.

A GOOD notion of the probable future working of the Adulteration Act may be gathered from the report of the recent case against Mr. Kelly, of Liverpool. The defendant is one of the most notable tradesmen in that great commercial town; his advertisements in the local papers, in which passing events are humorously and cleverly chronicled in rhyme, are recognised as among the standing treats of Liverpool life; and when we add in conclusion that he supplies a very good butter at 7d. per pound, we shall not be accused of fulsome flattering if we designate Mr. Kelly as a public benefactor. Now, Dr. Campbell Brown has recently been appointed public analyst to the borough, and, doubtless, a stern sense of public duty impelled him to an attack on Kelly's famous "Yell-oh!" We should not like to assert that Dr. Brown commenced his analysis with a mind biassed in the slightest degree; but however that may be it is certain that having brought his microscope, his spectroscope, and his general apparatus to bear on the poor 7d. butter, he finally stamped it with his *mene*, and summoned Mr. Kelly. There does not seem to have been any evidence beyond the analyst's certificate, which was as follows:—"This contains a quantity of stearin and palmitin; it is therefore largely adulterated by the admixture of fats containing these substances; the most common of these are lard, tallow, dripping, palm oil, and the fat from certain seeds. . This adulteration is not necessarily injurious to health." In opposition to this the defendant had retained Mr. Martin Murphy, the analytical chemist, who was prepared to assert that the butter was genuine, and to show by quotation from all the chief authorities that stearin and palmitin are constituents of butter. The magistrate was rather "fixed." He very sensibly declined "to become judge of scientific evidence," and what remained for him to judge of we are at a loss to conceive. He asked Dr. Brown, "Does the admixture increase the bulk or weight of the butter?" to which extraordinary query Dr. Brown is reported to have made the incomprehensible reply, "It increases the bulk," apparently declining to commit himself to any opinion about the weight. With this assistance, which it would seem like a joke to describe as "weighty," Mr. Raffles came to a definite conclusion, which seems to have been that the butter *was* adulterated, but he declined to convict, on the ground that there was no evidence to show that Mr. Kelly knew it. With a consistent impartiality he ordered that each side should pay its own costs.

Our contemporary, the *British Medical Journal*, maliciously recalls a decision against a Mrs. Smith, made by the same magistrate only a few weeks previously, who was summoned for selling adulterated milk. She pleaded that "the milk was purchased by her husband from other persons, and if it was adulterated it was adulterated before it was sent to the dairy." Mr. Raffles told her that "an Act had been passed making any person who sold adulterated food, whether they knew it was adulterated or not, liable to a penalty of £20."

We have previously expressed an opinion that this amateur, fussy, and badly-constructed Act, would occasion more mischief than it would prevent, and we fancy that if Mr. Raffles had had the hardhood to put a stop to Kelly's business, there were several thousand of his townsmen who would have asked the reason why. Whatever Mr. Kelly gives his customers it evidently is *not* Mersey mud; while it seems tolerably clear that he gives them a pound of a wholesome something, marvellously like butter, and change out of a shilling at the same time.

RESULTS AND PROSPECTS.

By Joseph Ince.

FEW years—as far as pharmacy is concerned—have been less sensational than 1872. There have been no violent commotions; no drawn battles, and no particular events The Society has been in the position of a fairly prosperous gentleman, enjoying the fruits of past labours, and with. little to chronicle in his daily life. An admirable summary will be found in our contemporary, therefore we turn at once to a few facts which must have arrested attention, rather than offer a catalogue of individual circumstances. The one most striking characteristic of the twelve months which have rolled away, is the growing importance attached to our examinations. We are justified in stating that the building in which they are held, has become totally inadequate to afford tolerable accommodation. The once customary single examination is a relic of the past; from two to three consecutive days are required to meet the new demand. It is sufficient discomfort to the candidate to encounter the anxiety of the ordeal, without being made profoundly uncomfortable during its operation. On each occasion the library is rendered useless by the presence of a crowd of waiting students; every possible temptation to unfair practice is forced upon them, of which, to their honour be it said, they take the smallest possible advantage. These arrangements are not in keeping with the dignity of a great institution. At the last "preliminary," forty-one candidates (including two ladies), about five gentlemen from the secretary's office, two visitors, and one examiner, had to meet together in a space adapted to receive about twenty people. The examiner, with his utmost vigilance, *must*, under such circumstances, trust to the honour of the aspirants, while they in turn are not unreasonable in hoping, at some future day, for lesser inconvenience. We have to talk about "Results and Prospects;" let us hope one may be that our excellent authorities will read these lines and transplant the whole educational machinery of the Society somewhere else. Let the professors have their lecture rooms and laboratory in a respectable establishment of their own. Our examinations as at present held, are a perpetual nuisance; they stop the business of the Society; they are unfair to the young men; they frustrate the intentions of the examiners. The Society is a man who has outgrown his clothes; it is no argument to say that they used to fit him once.

An unwise stir has been made about our examinations. A learned Professor whose studies had not led him in the direction of Whateley's logic, meant one thing and wrote another. He wished to say that cram was bad, and that solid knowledge was alone to be desired. From the published manuscript, an impression was conveyed that our students were little delicate in some of their proceedings, that their examiners were verdant to a distressing climax, and that of a mysterious personage, residing in a transpontine district, the least said the soonest mended. The result, however, has been propitious. The examiners placed, from that moment, mere book repetition at the lowest discount. The practical now reigns supreme; and if any man will so prepare his pupils as that they may pass creditably to himself and themselves, he will be entitled to no mean praise.

Here we stop for an instant, to say on oath that the practical may be overdone. A certain amount of dry, mechanical, rote book-learning is essential; but to imagine that the absolute practical is the one thing needful is, in our opinion, foolishness.

Let us not harbour angry thoughts, standing, as we do, on the threshold of the New Year. We are strong in our anticipations of the prospect that lies before us. As surely as when the seed is cast into the earth we look in due time for the golden corn, so surely we expect that of which we have evidence already—that no man need be ashamed of Pharmacy. It will become what it often has not been—an honourable as well as an honest occupation; though a medical journal, in the fulness of its wisdom, thinks that a physician, whose whole time is claimed by the bedside and the healing art, is alone capable of detecting arsenic and strychnine. So real has been and is the advance of the trade-science of Pharmacy, that we enter upon a new era of existence with perfect confidence.

This feeling of repose is somewhat shaken by the utterances of our great men. We do appeal seriously and solemnly against the teaching contained in our public orations, delivered for the improvement of the rising generation. In this age of educational theories, we are under the firm conviction that boys should be left to a great extent alone. There appears to exist a notion that there is no mental improvement for a pharmacist other than information gathered from the British Pharmacopœia. On this plan, an excellent analyst and pharmacist at Bristol has invented a patent juvenile, who is never to walk out without a scientific object. Now, were his object to spin a top or, if muscular and Christian, to partake of the athletic pastime of leap-frog, there could be no objection. We protest against the idea involved in the description, satisfied that it is wrong. Teach a boy the Bible, steep and saturate him with its literature. Give him next and also, with needful discrimination, the run of the English classics, and it will be no difficult task to fit him for our examination and our profession.

Let a pharmacist holding these remarks in scorn, read any series of examination papers containing English composition, and dare to say to himself that something in early training had not been neglected; we are aiming at results, and with firm expectation desire opening prospects. Our youth should be our companions: to know the exact market price of salts and senna is not the sum of human happiness. Further, if a man is intended to know pharmacy in these days, he must know something else. We have faith in love, the love of God and the love of learning; and we believe that the soul and the intellect are best educated in this one school. We believe that more harm has been done by the constant pertinacious insisting on a course of useful knowledge than by any other erroneous treatment whatsoever which has led a child astray.

John Cargill Brough has been so often described in these pages, that we can say but a word respecting one who carried with him so much love to his last resting-place. We are talking about results. The gospel preached by Brough was the doctrine of allowance. We cannot interpret each other by ourselves; we must judge men largely from their own stand-point. Let us grant what we claim ourselves, honesty of purpose, uprightness, and a wish towards and for the good, and the result warms one's very heart, two societies made one, two contending energies united, two sensible bodies of men brought into unity and common sense. And the prospect? Each succeeding day repeats the old story, in no theological sense, but practically "peace on earth—therefore, good will towards men."

We have reached our appointed limits—but one word more. A dead set has been made against the co-operative movement, which is decidedly downward, with tendencies towards the ruination of the retail trade. No objection was offered to the conduct of those gentlemen who, having much time and little money, tried to make those two ends meet; but a natural indignation was created when lords and ladies waited at the stores to take back brooms and brushes in their carriages. If nobody gets any profit save the barest from his work, who gains? Transmute London into an extended Camden Town with peddling tenements of £20 per annum, the last night's oyster-shells projected into the main thoroughfare, and the cat afraid to traverse the garden-wall, fearing to bring down the crazy erection—will that be likely to enrich our aristocracy? Wealth is a good thing when properly employed; competence is a good thing when not abused; to pay one's way is a good thing—better, perhaps, than either wealth or competence—but to compel a man to work at starvation prices is an insult to intelligence and skilled labour. Poverty, the inevitable result, is bad for the body and for the soul, and it has the promise of the loss of the life that now is, as also of that which is to come.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

Analytical Exercise.

It is our intention to distribute samples of another of the official compounds of the Pharmacopœia for analysis for this month. In addition to ascertaining the official name of the substance, it is to be subjected to such a systematic qualitative analysis as is required for the purpose of detecting any impurities which it may contain.

Students who wish to compete should send us their names and addresses before the 20th inst. On the 25th we shall forward the samples.

Students' papers will be received up to the 15th of the following month.

ANSWERS.

The subject of our last analysis was the *Potassæ Tartras Acida* of the Pharmacopœia. The impurities present were calcium, magnesium, aluminium, iron, and the carbonic, hydrochloric, and sulphuric radicals.

This powder presented an instance of moderate adulteration; such as would afford a slight increase or profit to the unscrupulous trader, without being calculated to excite suspicion. It contained 5 per cent. of calcium carbonate, which had been intentionally added. Doubtless this information will surprise several of our correspondents, who did not detect the carbonic radical. It must be remembered, however, that in making an aqueous solution of the powder the calcium carbonate would be decomposed, and carbon dioxide evolved, before an acid was added, in such a manner that the escaping gas might readily be overlooked.

If, however, the powder was subjected to the action of an acid the effervescence was very decided, and should not have been passed without trying the reaction of the evolved gas with a solution of calcium hydrate.

Although the quantity of calcium present was such as to render its detection comparatively easy, it escaped notice in several instances. There can be no doubt that the principal cause of this is that hasty and careless method of working which students so frequently adopt.

If we could take a peep behind the scenes we should probably find that a great deal of mess, and very little methodical work, is often the origin of the notes which we receive. In fact, we should not be at all surprised to find that there is occasionally a difficulty in telling what this precipitate and that filtrate came from, what they are to be examined for, or, perhaps, what stage of the examination they are in. Some of the remarkable discoveries made in the course of each analysis, and some discoveries which ought to be made, but are not, must proceed from such a state of affairs, if not something worse. On a former occasion we referred to the necessity for studying clearness of language in recording experiments, if one wishes to gain clear ideas of what they teach. It is scarcely necessary to say that this clearness should begin with the experiments themselves. They should not be hastily undertaken with any preconceived plan. On the contrary, every step should be previously considered, every essential provided, and everything not essential put out of the way. The simplest operation should not be undertaken until the expected results are duly considered; so that as much as possible may be foreseen. Such precautions, however, will be in vain if associated with a slovenly method of working.

It would indeed be difficult to overrate the necessity for cleanliness and neatness in chemical analysis. Remembering that habits once acquired, whether they are good or bad, exercise a powerful influence, it is surely the duty of the student to cultivate only such methods of working as he would wish to follow ultimately. In the study of an experimental science the observance of order with regard to apparatus and materials is essential to the orderly acquisition of knowledge. Disorder, on the one hand, leads to corresponding disorder on the other hand. It would be better to trust to book knowledge, than to pursue experimental study in confusion and messes; for like most attempts at saving trouble, this is only saving it for another time.

PRIZES.

The First Prize for the best analysis of the powder has been awarded to

Edward L. Cleaver (E.L.C.), 17, Bloomsbury-square.

The Second Prize has been awarded to

William Laugher, West Bromwich.

Marks awarded for Analysis.

E. L. C. (*1st prize*)	94
W. Laugher (*2nd prize*)	93
C. J. M.	91
B. P.	90
Secundus	90
F. W. Fletcher	89
H. Hippisley	87
C. E. B.	86
Humilitas	84
F. N. H.	8
G. P.	80
W. T.	78
Spes	73
J. L.	73
W. J. J. S.	70
W. Piper	68
Gradatim Excelsior	65
W. H. S.	64
T. B.	20
Omega	5

TO CORRESPONDENTS.

⁂ All Communications should include the names and addresses of the writers; those that reach us after the fifteenth day of the month succeeding that in which the questions appear will be disregarded.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

B. P.—Your analysis was very fair, but you left us to draw our own conclusions from the reactions, which would indicate that the salt was the acid tartrate. The extreme delicacy of Nessler's test is such as to render it unsuitable for rough qualitative purposes. You will probably find that your distilled water will give a very distinct yellow coloration with this test. The absolute absence of ammonia from the powder was impossible. We could not obtain the turmeric paper reaction.

F. W. Fletcher.—Sulphur dioxide is not the only gaseous product of the reaction of acid, potassium tartrate, and sulphuric acid, under the influence of heat. Carbon monoxide and dioxide are also evolved; if the sulphuric acid is in considerable excess the monoxide does not appear immediately.

Humilitas.—There was more to be learned from the burning of the substance than merely the presence of organic matter. When tartrates are burned a peculiar smell is evolved; not unlike that of burning sugar. This is almost characteristic of tartrates.

G. P.—If a volatile metal had been present you should have failed to detect it, as it would have been expelled in the ignition. You ought to have previously ignited a portion of the powder in a glass tube closed at one end, to ascertain if a sublimate was produced.

Spes.—We cannot consider a qualitative analysis complete without the preliminary examination to which we have so frequently referred. With a little practice, the dry examination of substances may be made the source of information of the greatest analytical importance.

J. L.—You dismiss the acidulous radicals in a very summary manner. You did not state how you found out that the precipitates with barium chloride and with silver nitrate were respectively free from sulphate and chloride.

W. J. J. S.—It would be worth while to compare the solubility of the two potassium tartrates; also the reactions of their solutions with test papers. It is very hard to say what the black spots were. You can easily make a mixture of cream of tartar and five per cent. of calcium carbonate, and try if you can reproduce them. If you can we shall be glad to hear from you on the subject.

W. Piper.—After the addition of ammonium carbonate the mixture should be warmed, as this greatly promotes the formation of the precipitate.

W. H. S.—The arsenic detected was probably an impurity in the zinc employed. You should have made sure of the absence of arsenic before adding the powder to the alkaline mixture.

T. B.—The first thing you should do with the powder on receiving it is to put it into a bottle. This will protect it from such accidents as you refer to, besides being more convenient and neat. Chemical formulæ are the best abbreviations of chemical names, and the sooner you accustom yourself to the use of them the better. We strongly recommend you to experiment on the analytical reactions of potassium salts.

Omega.—Very impure indeed for calcium phosphate. We could not attempt to point out the sources of your errors. The best thing you can do is to carefully analyze some cream of tartar; not omitting the solubility test.

Literary Notes.

The Owen's College Junior Course of Practical Chemistry. By HENRY E. ROSCOE, B.A., F.R.S., and FRANCIS JONES. London: Macmillan and Co.

RAPID travelling is one of the features of our age. Not only do we try to get from place to place with the greatest possible speed, but we must rush from a condition of ignorance to one of comparative knowledge in the shortest possible space of time. This little book is intended to take the student from glass-stirring rods and wash bottles, through the preparation of gases, and the study of their most important properties: blowpipe analysis; the reactions of the common metals, and their separation; the study of the acids and organic alkaloids, to the reactions of the rare metals. This is by no means a short journey, and under any circumstances it must be a laborious one; but in this little volume it is accomplished in the very limited space of 145 small pages. The beginner, who wishes to perform such a journey with *maximum* profit, will find this work an excellent *compagnon de voyage*, and it should prove equally valuable to the teacher. It is eminently practical. The text is concise, and at the same time accurate. The instructions concerning experiments are clear, and calculated to develop observant habits. At the end of the book there are some well-selected questions, which should ensure a thorough understanding of the facts to which they refer. There is also an index, and finally the handsome allowance of eighty pages of advertisements.

We have received the first number of a new magazine which is got up by the authorities of King's College School. Its official duty is to record the prowess of the boys of that school at football and other sports, and it contains besides some lively light reading between which there is a little "Science," by Joseph Ince, couched in the happy style familiar to our readers.

We have to thank Mr. T. H. Hills for a very interesting memoir of John Bell, the founder of "the house in Oxford-street," with a steel portrait. The memoir, we believe, is reprinted from an old number of the Pharmaceutical Journal. We shall give our readers some particulars of this historical chemist and druggist at an early date.

The International Scientific Series (Henry S. King and Co.) has commenced its career, two volumes having been issued. The first is by Professor Tyndall, on "The Forms of Water in Clouds and Rivers, Ice and Glaciers." The second is entitled "Physics and Politics," and is written by Walter Bagehot. The latter presents some strikingly original ideas, but we shall have more to say respecting both next month. Meanwhile, we may compliment the publishers on the effective style in which they got up these volumes.

The National Chamber of Trade has judged wisely in publishing at a low price a verbatim report of the great Anti-Civil Service Co-operative Store meeting at Willis's Rooms. The meeting was a splendid demonstration of indignant determination on the part of the trading classes of England, and will be a point to look back upon in the contest we are waging.

We have received again the Almanac issued by Mr. T. P. Wood, of Chesterfield. This book contains a good deal of matter specially relating to Mr. Wood's wine and soda-water business, and also a good bit specially interesting to the inhabitants of Derbyshire; but in addition it contains a quantity of useful information about cattle diseases, wines and tobacco, interspersed with some light reading.

NOTES AND QUERIES

WHITE TINCTURE OF IODINE.—The so-called colourless tincture of iodine may be prepared according to the following formula:—Tincture of iodine; Glycerine, pure, aa. ℥j; Sulphite of Soda, ʒj; M. Rub the salt to a powder in a small mortar, and add the glycerine gradually; then pour in the tincture, and triturate gently until a solution is effected and the mixture assumes an amber colour.

One of our Subscribers asks:—If Unguentum Hydrarg *Mitius* is *Unction* (as the country people call it), must not Ung. Hyd. *Fort.* be *Extreme Unction?*

F. Vincer (Sevenoaks).—Of course you are aware that the works of Rimmel and Piesse contain a good bit of really valuable information on the art of perfumery, though, perhaps, they are rather intended for drawing-room readers than those of the shop. There is a valuable French work by Guibourt, but at this late moment we cannot give you the exact title. A work by Professor Dussance, published by Trübner, entitled "A Practical Guide for the Perfumer," though not perfect, is, we think, the one most likely to suit you.

Mr. C. Crook. Inf. Quassiæ Conc.—Take 8 drachms of quassia in coarse powder, and percolate through it 10 ounces of weak spirit (S.V.R. ℥ij., aq. ℥viii.), making up to 10 ounces. *Brilliantine.*—Honey, ℥i., glycerine, ℥ss., eau de Cologne, ℥ss., S.V.R. ℥ij.

Beta.—The following is a formula for Syr. Ferri Phosph. Co (Parrish's).—Dissolve sulphate of iron ʒx. in boiling water ℥ij., and phosphate of soda ʒxij. in boiling water ℥iv.; mix, and wash precipitated phosphate of iron. Dissolve phosphate of lime ʒxij. in ℥iv. of boiling water, with enough hydrochloric acid to make a clear solution; precipitate with liquid ammonia, and wash precipitate. Add to the fresh precipitates phosphoric acid ʒxx. dissolved in water; when clear, add carbonate of soda ℈ij. and carb. of potassa ʒj., and then sufficient hydrochloric acid to dissolve the precipitate. Now add powd. cochineal ʒij., mixed with sugar ℔iij. (Troy); apply heat, and, when the syrup is formed, strain it. Dose, a teaspoonful, which contains about gr.j. of phosphate of iron, gr.ijss, of phosphate of lime, and smaller quantities of the alkaline phosphates.

EASTON'S SYRUP is Syr. Ferri Phosph. of the B.P., containing also in each fluid-drachm 1 grain phosphate of quinine, and 1·32 grains strychnia. A formula for Syr. Calcis Lacto-Phosph. was published in our August number (1872). Syr. Ferri Lacto-Phosph.—We have not met with any formula, but you can probably construct one from an examination of the last-named.

We beg to inform a correspondent whose name we have lost, that being a registered chemist in no way exempts him from serving on juries, or in any parochial office. We are hoping to get exemption in the first-named case, as the Attorney General's Jury Bill, when passed, will grant it.

A Country Chemist is informed that the sale of opium preparations or other poisons named in the Schedule of the Pharmacy Act by unregistered persons renders them liable to prosecution and a penalty.

Mr. Allan (Wellington, New Zealand).—We shall have more to say respecting the quack's book which you have sent us. Meanwhile you can accept our assurance that the representations there made are utterly false.

F. F.—Apply to Bates, Elliott, and Co., Burslem.

The following Information is "WANTED."

What quantity of nitrous oxide gas is dissolved by ether at the ordinary temperature and pressure?

What is the maximum dose of nitro-picrate of sodium?

SHOCKING ACCIDENT.—On the evening of Christmas day a shocking accident occurred to Mr. Arthur William Evans, chemist, residing at Millfield, Sunderland. He had been on a visit to his mother at Hamsterly, and on the return journey the train stopped at Seamside, at a siding, to await the arrival of the south train. Mr. Evans appears to have dismounted then, and walking towards the platform, was overtaken by the engine and run over. When found he was terribly mutilated, but still alive. He was removed to the Durham County Hospital, where he received every care, but he gradually sank and died. The deceased was about 30 years of age, and unmarried.

Correspondence

ANALYSIS OF CINCHONA BARKS.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—In referring to page 248 of your journal of the 15th August, 1872, the analysis made by Mr. Jobst of Java cinchona barks sold in Amsterdam in the month of March, 1872, you remark "that this analysis differs not inconsiderably from that published in the *Pharmaceutical Journal.*" I quite agree with you that the figures of Mr. Jobst's analysis differ not inconsiderably from those obtained by me, but as your remark might induce readers not thoroughly acquainted with the subject to distrust the results, either of the analysis of Mr. Jobst, or of those obtained by me, and published in the *Pharmaceutical Journal*, I take the liberty to fix your attention upon the fact that not less than 38 boxes, and 17 packages of C. Pahudiana have been sold at the mentioned public sale, and that therefore it is not only possible, but certain that the barks analyzed by Mr. Jobst and by me were *not identical.* But even if we had analyzed bark from the same box, our analyses would probably still show some difference, as every one acquainted with the subject will agree with me that two analyses of bark *cannot* forward quite *identical* results, unless the two analysts have taken a sample of the *well-mixed powder* of the bark to be analyzed.

I am, Sir,
The Hague, Your obedient servant,
December 19th, 1872. Dr. J. E de Vrij.

[The remarks on which Dr. de Vrij comments occurred in a letter from our German correspondent.]

CO-OPERATIVE STORES.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—Your correspondent signing himself "E. M. H.," although he will doubtless get many manufacturers and wholesale dealers to think with him, will utterly fail to satisfy the retail trade. He talks of the "supposed unfairness of the manufacturers." Now, those who have taken the trouble to inquire into the matter know that the unfairness is no supposition, but a reality. It is a well-known fact that the managers and buyers of the different stores go to the manufacturers and order the goods in their own private names, requesting to have them sent to their respective stores; these manufacturers then have the boldness to assert that they do not supply the stores.

The following case occurred to myself:—

A certain firm brought out an infants' food, which I thought seemed a desirable one, and likely to sell. I wrote to the firm, asking them if they intended to keep it to the legitimate trade only, or to let the stores have it (that I might know whether it was worth my while to introduce the article). In reply, they informed me that they did not supply the stores, but could not prevent them obtaining their article. Shortly after this, I obtained a price-list of one of the stores, the outside cover of which was devoted to an advertisement of the firm in question.

Now, I do not make a sweeping condemnation of the wholesale dealers as a body, for many of them respect the interest of the trade; but there are very many black sheep among them. They could have prevented the stores from assuming the proportions they have done, and could now, if they wished it, sap their foundations and cripple them very considerably. Doubtless it is impossible to prevent the stores obtaining certain articles, but it is quite possible to prevent them getting them first hand, and at an advantage over the ordinary retailer. If they are compelled to employ agents, and to draw their supplies in an indirect way, they must advance their prices; and I think the retailers have a right not only to ask, but to demand, that the wholesale houses use every endeavour to prevent their goods finding their way to the stores, and to refuse to supply anyone who they know is buying for the stores. Let those who have the trade interest at heart come forward and make a declaration to that effect (and keep it), and they will be doing themselves and the trade a good turn.

I was present at the last meeting of chemists at the offices of the National Chamber of Trade, but there was so much cringing to the wholesale firms that I fear little good will come from it until more decided action is taken.

I am, &c. One of the Retail.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—I feel much gratified that my former letter should have been so agreed with, and received such kind praise from your correspondents, "E. M. H.," and "G. Weston."

As it is probable your columns will contain further letters on the subject, may I again trespass on your space in order to say that there appears to be one point on which "E. M.H." has certainly misread my intended meaning, if not the actual words of my letter?

He assumes the basis of my recommendation to be retaliation for supposed unfairness, but as my letter stated that I considered the competition of the stores was in itself fair, I had certainly no intention of saying that the supply by the wholesale dealers was the reverse.

I simply say to them—deal with whichever you like, but understand that as a matter of policy, we, the tradesmen, do not wish to sell the goods of those makers who decide to supply the stores.

Thanking you for your former, and assumed present courtesy, I beg to remain, Sir,

Your obedient servant,
Frederick Cole.
Stoke Newington.

WORK.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Dear Sir,—In the Journal many letters have appeared, and some in your own, on the subject of salaries and education. Almost all appear to have forgotten that a man to be paid must work. The educated man should, if he works, be paid better, but who can afford to pay him unless he works. After receiving (had I paid proper attention) a good classical education, I served my apprenticeship in a large manufacturing town, where I was made to work. I then sought London, took a berth in the suburbs; little to do but read; received £25 per annum indoors. I left it, and got £30, then £35, then £40, then £50. I then left this and got £60, still indoors. I took some journies and got £80, indoors, and all expenses paid; I then received £120 out. I left and had £150. What I am now receiving is no matter; it is much more. But let me impress on all, if we are to be paid we must earn it. Look at the constant businesses for sale—£200, £300, up to £800 returns. Such businesses cannot pay high salaries; but if we work we may hope to go where there is more scope for our industry and better pay for our labour.

Yours truly, One Who Has Worked.

THE BANKRUPTCY ACT.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—In your remarks on the bankruptcy laws you speak as if it was competent for the present creditors to carry on the business. This, I think, they are not; few men would undertake the responsibility. My opinion is that the old law was far superior to the new. It wanted amendment; for instance, to mulct the creditors in £10 for stamp (because they had made a bad debt) was an absurdity and an injustice; for the Government to pay the officials a salary and themselves charge a commission, thereby making a profit to the State from the creditors, was also wrong. The expenses for law under the old law were too high, but the new is worse. Under the old law a trade assignee, with the consent of the official assignee, could carry on a business. I myself did so in two instances, and got a goodwill for each, and a good dividend for self and other creditors. Again, a commissioner could send a *fraudulent* debtor to prison without prosecution; now, you may examine, it is true, a debtor before a muff of a chairman, and find that the lawyers have proxies enough to swamp you and all the creditors present, and you are compelled to take what they please.

I know nothing of Mr. Sumner's case, although I knew his father well; but such a trade as that, with two good assignees, both official and trade, might have turned it to good account

Yours, etc.,

ONE WHO HAS BEEN ASSIGNEE UNDER THE OLD, AND CHAIRMAN UNDER THE NEW.

THE PRICE OF DRUGS.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—I think the attention of pharmaceutists and yourself ought to be called to the article in this week's *Lancet* (January 11th, 1873) on "The Price of Drugs." It appears the *Globe* has been endeavouring, in its ignorance, to make the public believe that the chemist is a most unreasonable and avaricious individual, ever seeking to enrich himself by exacting exorbitant charges alike from rich and poor, and living in luxury and ease by reason of his iniquitous profits. It is not surprising that the *Globe* should be ignorant on such matters, but it will be a matter of great surprise to most pharmaceutists that the editor of the *Lancet* should condescend to insert such a scurrilous article as appears in this week's issue under the head of "Medical Annotations." Pretending an ignorance which cannot be real on the main question, instead of endeavouring to point out where the *Globe* is in error, it rushes itself into still greater apparent misconception of facts, and winds up with the following:—"The fact is, the retail trade is gone mad. There are far more shopkeepers than the wants of the public require, and they think themselves entitled to all the luxuries and enjoyments of life. Their wives, glorious in seal-skin jackets and redundant jewellery, are to be seen everywhere, and the pretensions of the class are becoming a nuisance that it is high time to put down."

It will strike most of your readers that the writer of that article must be in anything but a sound state of mind to put such nonsense in print. Pray, why are not chemists as much entitled to the luxuries and enjoyments of life as any other class of people? They acquire their knowledge at great expense, they serve the public more assiduously, and their remuneration is far less in proportion for services rendered than that of their fellows who start in life on the same footing, but choose other employments. It seems high time, when the great cry amongst us is for higher education, that the question should be asked—When the proper standard of education has been attained, is there, in our large towns and cities especially, a sufficient and equivalent return in the shape of income derivable from the following of pharmaceutical chemistry? Certainly not, is the opinion of all practical men of any experience. The profession to a man of moderate or small means, whatever his education, is a beggarly one as regards its remuneration. I have called it a profession, for such it must undoubtedly be more and more viewed by unbiassed minds, and not, as the *Lancet*, with unconcealed animus, puts it, mere "shopkeepers."

Having referred to the *Globe's* investigation, the *Lancet* remarks:—"We regret the inquiry was not carried a step further, and that means were not taken to test the charges made for a prescription containing high priced ingredients. It is possible that no advance might have been made, and that druggists may strike a sort of average, and may charge for a 'mixture and pills' without much reference to actual value. We have, however, known many instances in which a modicum of quinine has been made a stalking-horse to cover demands of the most flagrant character." The conclusion arrived at is, that "no druggists are satisfied with a fair commercial profit, and that the charges of most are so exorbitant as to render it useless to give a prescription to any even moderately poor person." It does not say much for the truthfulness of the *Globe* agent, who went from shop to shop pleading the "poverty of the sick person." I may remark, too, that this plea is generally urged by well-to-do people, in this age of cheap things, with a desire to get the medicine under price, and usually has no foundation in fact; I place as much credence in such a statement usually, as I do when a person brings me a prescription of some London physician (and which has not unfrequently happened in the experience of most of us), which I charge 3s. 6d. for dispensing, and I am told it was had originally at Corbyn's or Savory's for half that price. It is the experience of the trade that such statements are usually false. If it be a genuine case of poverty, there are few pharmacists who would withhold a hospital note, or would not willingly dispense the medicine gratuitously. If a person cannot afford, really, to pay a legitimate price, give it by all means; but to charge so much each for the ingredients, so much for the bottle, paper and string, is such a palpable absurdity that I shall not attempt to say one word about it, because it is already well known to all the readers of the *Lancet* that such is not the mode of charging for dispensing adopted by any respectable individual or firm. If people are so poor as not to be able to afford two shillings per week for medicine, then they certainly are legitimate objects of charity, and the very people for whom our hospitals and dispensaries are intended. I might as well expect to get my bread at half price because I am poor, when I can get it from the Union or relieving officer. Of course there are special exceptions to this rule, and I should think every one recognises them. Of course, again, the charges in some localities would be higher than in others. Where people must have establishments for their convenience in districts where house rent is very high, a higher scale of fees must be demanded. The physician at the west end, I presume, gets higher fees than his brother at the east end of the town, and so it must of necessity be. Hence the range of prices. Doubtless those who charged so low were caught with the chaff about the poverty of the person; but it is not usual for very poor persons to select the best west end shops for their purchases.

What the public must understand is this: the pharmaceutist does not propose to charge for the individual ingredients of the prescription he dispenses; he makes a professional charge for the responsibility of dispensing accurately a prescription on which may oftentimes hang the life of the patient. It requires the same amount of care and attention and anxious regard if it only cost the pharmacien a penny as if it were intrinsically worth all he charges; and it might be as reasonably argued that because one medical man charges a guinea midwifery fee, while another charges five, the latter is iniquitous and "must be put down." No thoughtful medical man would talk in such an absurd way about dispensing as the *Globe* or *Lancet*. The men whom the *Lancet* would evidently like to see occupying the responsible posts of dispensing chemists are just the very class of men we are trying to rid the future of; and if the Pharmaceutical Society but adopt a wise course of legislation for us, we shall succeed in so doing.

Articles improperly prepared by people of deficient pharmaceutical education, or unskilfully compounded, or prescriptions carelessly dispensed, or dispensed by uneducated people, lead, as we all know, to the most disastrous results; while, on the other hand, the enlightened chemist is often called upon to check the prescriber, who accidentally may have written what he had not intended, or ordered too large a dose of a potent medicine in error, or left out some important quantity or directions. The fact is, we want a better feeling and understanding to exist between the medical man and the pharmaceutist. The *Lancet* thinks it high time we should be "put down;" I think it high time educated men and gentlemen should "put down" for ever such petty jealousy as must have prompted the writer to pen the article I have referred to.

I am, Sir, yours very truly,
R. M. HATCH.

Clifton, Jan. 11, 1873.

A SERIOUS accident has occurred to Mr. Williams, chemist, at his shop, 124, St. Phillip's-road, Sheffield, caused by a burning match being accidentally thrown into a drawer containing 2½ lbs of gunpowder, a portion exploded in his face, and burnt him very severely.

Trade Memoranda.

A STATEMENT has been published intimating the retirement from business of Mr. T. N. R. Morson, the senior member of the firm of Messrs. Morson and Son, manufac-uring chemists. We are authorized to assert that this nformation has no foundation whatever.

Mr. J. Wrangham, chemist, Malton, having taken into partnership his nephew, Mr. G. Hardy, the business will in uture be carried on under the title of Wrangham and Hardy.

HIGH QUALITY MINERAL OILS.—We notice that Strange's A1 crystal oils have recently undergone some severe crucial tests by three well-known chemists, each of whom have given evidence before the House of Lords on the subject of petroleum, and may be said to represent three schools of hought in petroleum chemistry. The samples examined were drawn from each of nine different shipments, representing an aggregate of some 250,000 gallons, and the record made as to their points of inflammability is very satisfactory. The tests were conducted by Mr. Dugald Campbell, Dr. Letheby, and Mr. Keates, the consulting chemist to the Metropolitan Board of Works, and the conditious and instructions of the Petroleum Act were strictly adhered to, the standard of which is 100°. Mr. Campbell's and Dr. Letheby's results showed an average for the nine samples of 118° Fahr., the average of Mr. Keate's tests upon the same principle being 115° Fahr. Further experiments with the closed vessel test or that proposed by the late Bill, which fixed the standard at 82°, gave results equally satisfactory; the average in the one case being 102°, and in the other 101°. Mr. Dugald Campbell further remarks that, "As regards colour and odour we found them to be of excellent quality;" but Mr. Keates is still more emphatic. He says, "With the exception of No. 9" (which flashed at 105°), "these samples of petroleum present the highest flashing points of any series of samples I have ever examined." We give particular notice to these facts, as they are of importance to those who keep the oils in stock, and we only hope that so long as oil of such high quality is supplied to the trade it will meet with the patronage it deserves.

Mr. Cole, of Stoke Newington, has bought the business of Mr. Gooch, of Highbury Park, and will henceforth carry on the two establishments.

At the Bankruptcy Court, William J. Coleman, St. Mary-at-Hill, City, passed his examination—total debts £11,555, assets 11,244. The accounts of the bankrupt's partnership with Alfred Coleman, disclosed unsecured debts, £19,237; assets estimated at £274.

Parish of Birmingham.—There were five tenders submitted for the supply of drugs, viz., Mr. Thomas Burbidge, 16, Coleman-street; Messrs. W. Valentine Wright, Joseph Sellers, and Charles Noel Layman, Southwark, London; Mr. Walter Robert Jones, Jamaica-row, Birmingham; Mr. Thomas Wallis Holdsworth, Upper Priory, Birmingham; Messrs. Phillip Harris, and Co., Digbeth, Birmingham. The three last were selected on the usual conditions where the articles tendered for are the same in price—the quantity to be divided; and where lowest, the lowest quotation secures the order.

Messrs. Tidman and Son will remove, on February 18th, from Wormwood-street to Wilson-street, Finsbury, where in larger premises they will be better able to extract their well-known salt from the "foaming billows."

Dodwell's Marking Ink is a new article offered to the trade. Samplers, with comic designs, are supplied with it, and we have satisfied ourselves of the good qualities of this ink.

The large business of J. Daily and Co., mineral water manufacturers, Leamington, is now carried on by Messrs. Kinmond and Co. In the advertisements issued by this firm we notice some striking statements, which powerfully illustrate the results of advertising and enterprise generally. In one month last summer they paid for carriage of goods to their agents throughout the country no less than £397 2s. We commend this fact to the consideration of any firm hovering on the brink of bold publicity. Messrs. Kinmond's mineral waters are of excellent quality, and we may mention among them a speciality—sherryade. This is very like lemonade, but with perseverance one can detect a slight Amontillado flavour in addition. The waters are supplied in strong but light cases, especially and conveniently constructed for the purpose.

ARRANGEMENTS AND COMPOSITIONS.

BLANCHARD, THOMAS, Church-walk, Trowbridge, chemist and druggist.
BROOMHALL, JOHN, Newtown-row, Birmingham, druggist and grocer.
EARP WILLIAM RICHARD, Tunstall, chemical manure manufacturer, trading in partnership as Earp Brothers and Fleming.
EVANS, FREDERICK WILLIAM, Morgan-street, Tredegar, Monmouth, chemist and druggist.
GORRELL, WILLIAM HENRY, Breightmet-street, Bolton, drysalter, oil, and drug merchant.
SHARPLES, GEORGE WILLIAM, Blackpool, chemist and druggist.
WATERSON, JOHN, Coventry-road, Birmingham, chemist and druggist.

SCOTCH SEQUESTRATIONS.

HART, ANDREW PAUL, Stirling, druggist.
OGILVIE, THOMAS JAMES BAIRD, and COLIN CAMPBELL GRAY, Glasgow and Croy, Dumbartonshire, manufacturing chemists.

PARTNERSHIPS DISSOLVED.

BOWKER, S., and R. METHUEN, Manchester, chemists.
CLARKE, T. M., and P. L PALMER, Mortlake, Surrey, chemists.
DEMPSEY, W. C., and E. R. GERRARD, Westbromwich, Staffordshire, surgeons.
ELLIS, R. J., G. DOBSON, and G. M. MOORE, Liverpool, chemical manufacturers, so far as regards G. Dobson.
FRAZER, J., W. FRAZER, B. FRAZER, and J. M. FRANK, Jarrow, Durham, and Newcastle-upon-Tyne, chemical manufacturers.
HOULGRAVE, ROBERT, and ELLIS HOULGRAVE, Liverpool, tar and turpentine distillers.
HOWELL, THOMAS SYMONDS, and EDWARD SUTCLIFF, High-street, Wandsworth, surgeons.
LAYCOCK, R., and C. LAYCOCK, Rotherham, chemists.
MOORHEAD and MORROW, 202 and 204, North-st, Belfast, druggists and general merchants.
M'QUIE, PETER ROBINSON, and WILLIAM M'QUIE, Liverpool, chemical brokers.
NUTTALL, F., and W. NUTTALL, Bury, Lancashire, surgeons.
PIKE, T., and F. R. BERNARD, Weyhill and Fyfield, Hampshire, surgeons.
PRICE, R. G., J. HARVEY, and C. PRICE, Upper Thames-street, City, and elsewhere, oil merchants, so far as regards C. Price.
THOMSON, C. E., and C. C. M. U. C. COCKS, Ross, Herefordshire, surgeons.
TUCK, J. and W. W. HOWARD, Glossop and Hadfield, Derbyshire, surgeons.

AN inquiry was held at the "Knave of Clubs," Club-row, Bethnal-green, respecting the death of Jane Winslade, aged six years. It appeared from the evidence of the mother that the child had been ailing a fortnight, and being too poor to pay for a doctor, she had applied to the parish authorities for medical aid, but was refused it. She then took the child to Mr. Raynor, a chemist, who prescribed for her some medicine, and two powders, for which the sum of 8d. was paid. The same evening Mr. Raynor called to see the child, who shortly afterwards expired. He gave her a certificate, which she took to the Registrar. Dr. Lilley made a post-mortem examination of the body. Death arose from pneumonia, arising from inflammation of the lungs, but he was of opinion that a medical man (if called in time) might have checked the disease. The Coroner said it was an illegal act for a chemist to visit persons, or to give certificates of death. Such a practice would have the effect to retarding justice and causing great mischief. Verdict: Death from natural causes, accelerated by the want of proper attendance.

LEGAL NEWS.

THE PILL BOX TRADE.

A case was tried at the Liverpool Court of Passage on the 4th instant, between Mr. W. Whiteley, timber dealer, plaintiff, and Messrs. J. Austin and Co., manufacturers of druggists' appliances, Duke-street, Liverpool, defendants. The action was brought to recover the value of some willow wood, which the defendants had bought for the manufacture of pill-boxes. It appeared that the defendants in June, 1871, advertised for a considerable quantity of willow wood, of which the pill-boxes are made, and the plaintiff, having a number of willow trees growing, replied to the advertisement. The manager to the defendants went to the plaintiff's residence and saw the trees, and seemed to be satisfied that the wood was suitable for the purpose. Subsequently, a contract was entered into for the purchase of 2,500 feet of timber at 2s. per foot in bark, less nine per cent. discount. This was signed by Mr. Austin on behalf of the firm, but when the plaintiff saw the contract note, he observed, for the first time, that it was stipulated for a supply of clean, white, willow timber. Plaintiff objected to the word white, as the wood being then growing he could not guarantee its being white or otherwise. Consequently the word white was struck out of the contract note, and the words "and sound" inserted above it. The wood when cut down perversely turned out to be red. The defendants refused it on the ground that they contracted only for white wood, as red wood was utterly useless for the manufacture of pill boxes.

The word "white" they stated was not erased from the contract note when it was handed over to the plaintiff, and this was the question for the jury. The jury found for the plaintiff for £50 18s. 10d., the loss which he had sustained by the non-acceptance of the wood which he had forwarded to the defendants, and which was subsequently sold at a sacrifice.

APPRENTICESHIP.

In the Liverpool Court of Passage on the 7th inst., W. S. Tunstall, an orphan, about sixteen years of age, sued Mr. W. H. Garthwaite, chemist and druggist, Pembroke-place, Liverpool, upon a deed of apprenticeship, to recover damages for having neglected to fulfil the conditions under which the plaintiff became an apprentice to him. The plaintiff was bound for a period of five and a-half years, and a premium was paid on two different dates—on the first occasion £20, and subsequently £30; and it was stated that after the second payment was made, the defendant began to treat the plaintiff in an unkind manner, neglected to teach him his business as was agreed upon, and that in October last he sent him home to his uncle. It was also contended on behalf of the plaintiff that the defendant had made him do the work of an errand lad, that he struck him on more than one occasion, and that once he was summoned to the police-court for assault and was fined 1s. and costs. For the defence it was urged that the plaintiff had persistently refused to learn the chemist's and druggist's business, that Mr. Garthwaite tried as much as possible to teach him, and that he was eventually obliged to send him home in consequence of his disobedience. The jury returned a verdict for the plaintiff, damages £30.

A WISE MAN FROM THE EAST.

Some men are born great, some achieve greatness, and some have greatness thrust upon them. Of those who come under the latter head, Mr. Henry Jackson, of Hull (upon whom the mantle of Madame Rachel would seem to have fallen) deserves a foremost place. Henry, it seems, at one period of his life was a warrior gay. Since his return to civil life he has also followed—we beg pardon—preceded the drum, for he was drum-major of the Hull Volunteer Rifle Corps, and has latterly emerged from the chrysalis state into a full-blown quack doctor, with his head-quarters in Blanket-row. He styled himself Professor Jackson, late of the Indian Army, R.C.A.R. (the mysterious initials are rendered Railway Crossing, Arlaby Road). Here, surrounded by his "Great Indian Remedies," his "Holy Trees," "The Bread of Life," "The Heavenly Manna," circulation belts, and "pulse globes," Henry, knowing that rank superstition, based on the densest ignorance, still thrives luxuriantly, waited for the flats and greenhorns whom he knew would inevitably tumble into his net; he caught a Tartar, however, in a farmer named Richardson, who bled freely at first, and to the tune of £200. Richardson's friends at last interfered, and Henry was brought to book, and sentenced to hard labour in Hull gaol for twelve months.

THE VACCINATION REVOLT.

Mr. William Young, chemist, of No. 8, Nceld-terrace, was summoned to Marylebone Police-court, under the Vaccination Acts of 1867 and 1871, to answer for neglecting to have his child vaccinated. Mr. Young handed in a certificate signed by Dr. W. J. Collins certifying that the child was in an unfit state to be vaccinated; it being suggested that Dr. Collins held vaccination to be improper in any case. Notwithstanding Dr. Collins' denial of the fact, Mr. Mansfield said he thought Mr. Young a very cruel father to subject his children to the danger of small-pox, and find him 20s., and 20s. costs.

GAY LIFE.

An action of a somewhat extraordinary character was heard in the Court of Exchequer, Rushbrook *v.* Hickisson. Rushbrook was formerly a working jeweller, but having relinquished that business through ill-health, he became an omnibus conductor, and afterwards a pantaloon in country theatres. He had three unmarried daughters, and it was for the seduction of the second, named Isabella, that the action was brought. The defendant is well known as husband to "the daughter of the late John Bond," marking ink manufacturer. Isabella was a ballet dancer, so was her elder sister; they earned from £2 to £4 per week between them. In the month of February, 1871, at that bower of bliss known as Sam Collins' Music Hall, the defendant introduced himself to Isabella as Mr. James Bond, of course an unmarried man. Under these circumstances a great intimacy sprung up between them, with the result that in August, 1872, Isabella was confined of a child; she being herself no more than seventeen years of age. Isabella, when placed in the witness-box, acknowledged that she was not immaculate, to say the least of it, before her intercourse with Mr. Hickisson. The jury, however, awarded her damages £20.

PUBLISHING AN OBSCENE BOOK.

Dr. Charles Watson pleaded guilty to an indictment charging him with publishing an obscene book; 4,000 copies were found in his house. He was ordered to enter into his own recognizance for £1,000 to come up for judgment if called upon.

INFRINGEMENT OF THE PHARMACY ACT.—FIRST CASE IN SCOTLAND.

An important case was tried on January 10th before Sheriff Murray, at Glasgow. William L. Wilson, tenant of the Garscube Old Apothecaries' Hall, 142, Garscube-road, appeared to answer to a complaint at the instance of the Pharmaceutical Society of Great Britain, for contravention of the 15th section of the Pharmacy Act, 1868, by keeping open shop for the sale of poisons, he not being a duly registered pharmaceutical chemist, or chemist or druggist, under the Act. The defence was (1) that the respondent was not liable in the penalty sued for, in respect of his having been in business as a chemist and druggist before the passing of the Act; and (2) that he was the partner or assistant of Dr. Lawrie, who was the party on whose behalf all the poisons sold in the shop were retailed. It was proved for the complainants that the respondent was the tenant of the shop, and that he had sold certain poisons in November last, with his name upon the labels. The Sheriff held that the respondent required to be registered to entitle him to sell poisons, and that he must be regarded as the seller, as the labels on the articles sold bore his name; and, accordingly, convicted him of the offence charged, and found him liable in the statutory penalty of £5, with expenses.

THE QUACK CRUSADE.

Dr. J. S. Kahn, of the Museum, Tichborne-street, was summoned for selling an obscene book, entitled "The Philosophy of Marriage." Kahn was not in England, but a person named Davidson, in his employ, appeared. The case was adjourned, two bails in £100 each being accepted for Davidson.

"ON THE ROAD" TO RUIN.

Mr. John Altrin, a commercial traveller, was indicted for stealing six hair brushes, value £1 10s., the property of his employers, F. S. Cleaver and Co., soap manufacturers. He was found guilty, and sentenced to hard labour for six months. Messrs. Cleaver seem to be singularly unfortunate with their travellers; this is the third prosecution by them within a very short time.

THE NOBLE ART.

Dr. Archibald Douglass, 8, Clifton-place, Sussex-square, has had the sum of £5 to pay at Marlborough-street Police-court, for the pleasure of landing one on the nose of Mr. Bussard, a pastrycook in Oxford-street, besides flourishing his stick and frightening the ladies in the shop. The doctor denied the soft impeachment.

ANALYTICAL CHEMISTRY AND ITS REWARDS.—LIVERPOOL COURT OF PASSAGE.—MURPHY v. THOMAS.

The plaintiff, the proprietor of the School of Chemistry, Duke-street, sought to recover £316 18s. 6d. from Mr. Campbell Millett Thomas, for analytical work done. Dr. Commins appeared for the plaintiff, but the action was undefended. The plaintiff's case was that, on the 25th March last, the defendant called upon Mr. Murphy with some ores. The defendant was getting up a mining company at Santander, in Spain, and he requested the plaintiff to analyse the ores which he brought for the purposes of the formation of the company. The analysis was made at a cost of 50 guineas, and the defendant paid 10 guineas on account of this charge. An analysis of other ores was also made, for which the defendant was to pay 100 guineas, but as there was less trouble in carrying out this professional duty the plaintiff reduced the charge to 80 guineas. The latter amount had never been paid, whilst six guineas were subsequently incurred for further analyses. Afterwards the defendant asked the plaintiff to proceed to Santander, there to examine the mines and draw up a report, which was to form the basis of a prospectus. For this the plaintiff was to receive £100 in cash, and £200 worth of paid-up shares in the company, which was to be styled the Spanish Zinc Company. In answer to questions, the plaintiff stated that he did not know whether the shares were now in the market, but at the time he entered into the agreement to go to Spain he considered the shares not worth £200 only, but five times that amount. The learned assessor decided that nothing could be claimed in respect to the shares, and eventually a verdict was returned for a balance of £116 18s. 6d., that portion of the claim respecting the non-delivery of the shares having been withdrawn.

SERIOUS CHARGE AGAINST A MANUFACTURING CHEMIST.

On the 26th ult., at the Accrington Petty Sessions, Thomas Simpson McKenzie, manufacturing chemist at Church Kirk, was brought before the sitting magistrates, charged with receiving ten casks, the property of Messrs. H. Bury and Co., knowing them to have been stolen. The prisoner's business place adjoins that of the prosecutors, and they produced a man named Hindle to give evidence against McKenzie, and he confessed he had systematically robbed his employers for two years, and sold the casks to McKenzie and others. Prisoner pleaded not guilty. The Bench committed him for trial, but expressed their willingness to admit him to bail in £100 and two sureties of £50.

ARSON.

At the Lewes Assizes, on December 17th, 1872, before Mr. Justice Byles, William Henry Funnell, 45, described as a gentlemanly looking man, a chemist, of Brighton, was indicted for wilfully and feloniously setting fire to his dwelling-house, at Brighton, one Thomas Foat and other persons being therein at the time. Mr. Merrifield conducted the prosecution. The prisoner was defended by Mr. Willoughby, The prisoner occupied 13, Charles-street, Brighton, and used the front room on the ground floor as a chemist's shop, and the back room as a consulting room, and the upper floors of the house were occupied by a Mr. Foat and his family, who rented them of the prisoner. On the 11th of October the prisoner insured his stock in trade as a chemist, in the front shop, and his furniture in the back room, with the agent of the Scottish Union Fire Office at Brighton, for £100, and the fire that was the subject of inquiry took place on Monday, the 4th of November. On the previous day, Sunday, the prisoner appeared to have gone to his shop, which was unusual for him, and it was suggested by the prosecution that he was engaged in making preparations for the event that took place on the following day. On the Monday morning he was at his shop about ten o'clock, and he then appeared to have informed Mrs. Foat that he had received a telegram, which required him to go away immediately, and he left in a hurried manner, having previously locked up his shop, and the door that communicated from it with the back room. From this time no one could have had access to the prisoner's premises, and nothing seemed to have occurred until about three o'clock in the afternoon, when the person who lived in the house adjoining the prisoner's observed a peculiar blue flame burning in the partition between the two houses. An alarm was given, and it was at first thought that it was an escape of gas, and a gasfitter, named Slatter, was sent for, and he broke into the room at the back of the prisoner's shop. He was astonished to find that the flames were proceeding from a hole that had evidently been purposely made in the wooden partition of the room, and the combustion was of such a chrracter that although he poured a considerable quantity of water into the hole it did not seem to have any effect upon the flames, which appeared, on the contrary, to burn all the more fiercely; and it was evident that the fire was not at all of an ordinary character. He then scraped out the burning material, which appeared to consist of a quantity of lint, sawdust, and paper, and a portion of the lint which was not lighted when he pulled it out burst into a flame when it fell upon the floor; and it was evident that some chemical ingredient had been used to occasion the fire. A portion of the lint was subsequently submitted to Mr. Schweitzer, an analytical chemist at Brighton, for examination, and he ascertained beyond doubt that it, and the paper also, had been impregnated with phosphorus, and succeeded in extracting thirteen grains of pure phosphorus from a portion of the lint. He also explained that a person acquainted with chemistry and the peculiar qualities of phosphorus might have so arranged his preparations for the fire that the ignition would not take place for several hours, and that consequently all the arrangements for the fire might have been made by the prisoner at the time he was last seen in the house, at ten o'clock, although no discovery took place until five or six hours afterwards. In consequence of the timely discovery it appeared that very little damage was done. In addition to these facts, which appeared to be almost conclusive to show the guilt of the prisoner, evidence was given that the furniture in the back room was not worth more than £5, and that the stock in the shop was also of very trifling value. When the prisoner was apprehended, and the warrant charging him with the offence of arson was read to him, he made no reply, and he never attempted to give any explanation of the extraordinary facts that were apparent when the discovery was made.—The prisoner's counsel maintained that the evidence was not sufficiently cogent to bring the charge home to his client, but the jury brought in a verdict of *Guilty*, and the judge having commented on the serious character of the offence, sentenced the prisoner to seven years' penal servitude. It transpired in Court that there had been three other fires in premises occupied by the prisoner, and that there was a suspicion in every case that they had been occasioned by some chemical agency.

BATTLE'S VERMIN KILLER.

At the Cambridge Petty Sessions on January the 9th, Mr. Crabb Gillett, chemist, was charged with selling strychnine without entering an account of the transaction in a book as by law required. Walter Kirbyshire, a lad fourteen years of age, said: I went to the shop on Peas-hill last Thursday, and asked for a packet of Battle's vermin powder. Mr. Gillett asked me what price, and I said a threepenny packet. He gave it to me; I paid the money and left the shop. I gave the packet to my father. Cross-examined: Was my name and address upon the packet? The lad: Yes. Mr. Gillett: That is sufficient. Detective Kirbyshire, examined, said: I saw the packet. It was labelled "Battle's Vermin Powder," and had upon it the address of Mr. Gillett. Mr.

Arthur Deck, practical chemist, King's-parade, said: I received a packet as described by the last witness. I have subjected it to analysis. It contains strychnine; nearly one grain and a-half in a packet. Mr. Adams: Would you give a sixth part of that to a customer? No; it would be dangerous. Mr. Gillett said that he sold the packet according to the then Act of Parliament, and that he was only doing what ninety-nine out of every hundred chemists did. He sold the packet as a vermin killer; he did not know the quantity of strychnine it contained. Mr. Turrall said that Mr. Gillett must not suppose that he was summoned in particular; the information was laid as an example for all the chemists in the town. The Mayor alluded to the impropriety of selling the poison, inasmuch as each packet contained six times as much strychnine as would kill a man. Owing to persons placing poison about the town, no less than a hundred dogs had come to grief, and sixty animals had been doctored by one surgeon alone. This was very dangerous, and if animals could be poisoned in this way, human beings might suffer. The fine for the offence was £5, but the Court thought every end would be answered if that sum were mitigated to 5s. and the expenses, £2 17s. 6d., two guineas going to the analyst, Mr. Deck.

THE ACID GROUP.

A case of considerable importance was tried on December 21, at the Liverpool assizes, between Messrs. Powell and Hingston.—Mr. Charles Russell, Q.C., and Mr. W. C. Gully were counsel for the plaintiff; Mr. Holker, Q.C., and Mr. T. H. James were for the defendant.—The plaintiff is a perfumer and hairdresser, and the defendant a chemist and druggist in Bold-street, Liverpool, and this action was brought for injuries suffered by the plaintiff in consequence of the defendant supplying him, as was alleged, negligently, with a bottle of nitric instead of sulphurous acid. It appeared that in April last the plaintiff had been ill, and was using, by the orders of his medical attendant, for a relaxed throat, an application of sulphurous acid, which was administered by means of a "spray." He was in the habit of getting the acid for the purpose at the defendant's shop, the prescription having been first sent to the defendant some time previously, and the bottle, having the label upon it containing the words "poison" in print and "sulphurous acid" in the defendant's handwriting, having subsequently been refilled on several occasions. The bottle was a 2oz. bottle. The plaintiff had also been in the habit of obtaining other substances at the defendant's shop, both as medicines and for the purposes of his business, and, among others, nitric acid, used either as an ingredient of the ladies' hair dye called "auricomus," or for bleaching the hair before applying the dye. The plaintiff and his witnesses stated, however, that this description of acid was always obtained in a larger and wider bottle than a 2oz. bottle—viz., a 6oz. bottle, having the same description of label printed "poison," as the other, but with "nitric acid" written in the defendant's handwriting instead of "sulphurous acid." The plaintiff's case was, that the plaintiff suffering from his throat on the 4th of April, a little girl was sent with the smaller bottle used for the sulphurous acid, and having that label upon it, to the defendant's shop, and she asked for "Sixpennyworth of this stuff; the name is on the label." The bottle was filled by the defendant himself, but with nitric, and not sulphurous, acid. When the nurse uncorked the bottle she was struck with the fumes that came from the acid, but reading "sulphurous acid" on the label, she was re-assured, and filled the spray and used it on the plaintiff's throat. He immediately shut his mouth, but a quantity of the acid had gone into the throat and a quantity also on to the chin and face. The consequence was that the plaintiff was very much burnt, and he bears now permanent scars upon the mouth and chin, and suffers still acute pains when in a hot room or temperature. It appears that he is an amateur musician, and plays upon most wind instruments, and these injuries have considerably interfered with his ability to do so. The day after the accident Miss Edwards, the plaintiff's assistant, went to the defendant's shop for some magnesia for her master, and the defendant went back to the plaintiff's shop with her, where she showed him the bottle. He carried it away with him, and it has never been seen since. A chemist had been sent for, however, immediately on the happening of the accident, and he said that he looked at the label on the bottle, and, reading there "sulph" on that part of it which the acid had left unburnt, exclaimed, "Why this is sulphuric, and not sulphurous acid!" The defendant afterwards stated that he was very sorry for what had happened, and gave the plaintiff a £5 note in consideration of the injury.

The defendant's case was, not only that there was negligence on the plaintiff's own part sufficient to disentitle him to recover, but also that there was no negligence at all on the part of the defendant. He and his assistant and porter brought from his shop stated that the little girl brought a bottle with a label almost obliterated, and asked for "three or four pennyworth of the acid," and that the defendant ordered the porter to wash out the bottle and the assistant to fill it with nitric acid. He then wrote out a new label with "Nitric Acid" upon it, and put it on the bottle, and giving the girl a caution about taking care of the acid, which would burn her, sent her off with it. When the defendant got the bottle from Miss Edwards the next day it still had the "nitric acid" label upon it, and the defendant produced it in Court as having been in his possession ever since. This case was further supported by the evidence of the plaintiff's own medical attendant, Mr. Taylor, who was called in in the confusion immediately after the accident, and he stated that he then saw the bottle, and that it was labelled "nitric acid." On this point his evidence was in direct contradiction of that of the chemist, who also saw the label, and spoke to its containing "sulph," and Mr. Taylor was closely cross-examined as to a part he was accused of taking in attempting to compromise the case, and also as to his complaining that his bill had not been paid by the plaintiff, and threatening that he would not be able to give the same evidence in the case as if it were. He entirely denied these suggestions, however. With reference to the nurse's declaring that she had read "sulphurous acid" on the label, it was said that she was unable to read, and she certainly appeared unable to read letters put into her hand in the witness-box.

In consequence of the contradictory evidence on the two sides in this case it became invested with more than an ordinary amount of interest, and the learned counsel on both sides made most able and forcible speeches. In the result the jury found their verdict for the defendant.

Mr. Richards has succeeded the late Mr. Conder, of Hastings.

Mr. Leech, chemist, Brighton, has retired from business.

Mr. Smithson, chemist, has opened a business in New England-road, Brighton.

The guardians of the Sheffield Union have accepted the tender of Mr. Hudson Westbar for the supply of drugs.

OBITUARY.

Suddenly, on January 9, 1873, at 40, Aldersgate-street, E.C., James Davies Parker, upwards of twenty years the confidential clerk of Messrs. Herring and Co., wholesale druggists, London.

On the 6th June, 1872, Mr. John Taylor, pharmaceutical chemist, of Preston. Aged 62.

On the 21st December, Mr. Joseph Templeton, chemist and druggist, of Liverpool. Aged 47.

On the 23rd of November, Mr. John Whitfield, pharmaceutical chemist, of the firm of Whitfield and Son, Worcester. Aged 45.

On the 14th of September, at Perth, West Australia, of consumption, Mr. John Thomas Glass, late of Cheltenham and Bournemouth.

On the 22nd of November, Mr. Richard Constantine H y, chemist and druggist, of Bond-street, Leeds. Aged 79.

On the 13th instant, Mr. G. Waugh, chemist, Regent-street. Aged 74.

EXCHANGE COLUMN.

vised Terms.—Announcements are inserted in this column at the of one halfpenny per word, on condition that name and address are d. Name and address to be paid for. Price in figures counts as one rd.

f name and address are not included, one penny per word must be l. A number will then be attached to the advertisement by the lisher of the Chemist and Druggist, and all correspondence relating t must be addressed to "The Publisher of the Chemist and Druggist, onial Buildings, Cannon-street, London, E.C.," the envelope to be lorsed also with the number. The publisher will transmit the correndence to the advertiser, and with that his share in the transaction l cease.

FOR DISPOSAL.

ndley's "Medical Botany," 7s. Chambers, Haddenham.

oulding's Plant Food. For offers. Wyles, Bourn.

ot of 1s. Marking Ink. For exchange. Wyles, Bourn.

aree 14 lb. parcels finest Turkey Opium. Price 25s. per lb. 1/611.

owne's "Chemistry," tenth edition, in good condition. Price 8s.

escher's "Elements of Pharmacy," in excellent condition. 4s. 6d. 60/411.

ob Patent Drugs and Sundries, cheap. Send 1d. for List. J. Floyd, Bury St. Edmunds.

ot. Iodid. Pure. Offer wanted. Cowley, 2, Athol-villas, Peas-hill Rise, Nottingham.

ne dozen 1s., ¾ dozen 6d. Tidman's Salt, perfect. 8s. the lot. Lockwood, chemist, Sheffield.

Pharmaceutical Journal" for 1872, unbound. Offers wanted. "Ophelia," 55, High-street, Lynn.

illard's Condiment, 3s. per dozen, carriage free, or 1 gross, including box, for 30s. Brewis, Amble.

opying Press for sale or exchange. Price 12s. Richford, chemist, St. Lawrence, Thanet.

our Large Show Jars; three Bottles. Wanted Opium, or offers any kind. Faulkner, 40, Endell-street.

ets of Eight Forceps, in Morocco Pouch; new, 25s. each. Address J. G., 14, Netherthorpe-street, Sheffield.

Eight 2-gallon Stoppered Carboys, 16s.; Mahogany Toothbrush Stand (Maw's, Fig. 52). Price £1. 13/611.

Owen's "Conspectus," interleaved; Owen's "Receipts," a few perfect copies, 1s. each. 6, Altantic-terrace, East Brixton.

Ivory Dust, about ¾ cwt. An offer wanted. Sample if required. George Hiliidge, 140, Friargate, Preston, Lancashire.

One of Bushby's Patent Pill Machines, in good condition. Cost £10. Offers wanted. Apply to Wrangham and Hardy, chemists, Malton.

Surplus Drugs, Chemicals, Druggists' Sundries, and Patent Medicines. Send stamps for particulars to H. Smith, 53, Parsons-street, Banbury.

A Two-Flask Vulcanizer, with Flasks in perfect condition. Cash price £2 5s.; also an Outside Mortar, solid wood, 7s. 6d., regilded eighteen months ago. 59/611.

Surplus Stock. 14lbs. Barb. Aloes at 1s. 8d., or less at 1s. 6d.; Pulv. Cinchonæ Opt., at 2s. 6d. Samples free. Enclosed any London house. 23/611.

"Chemist and Druggist," 1872, 3s. 6d. "Pharmaceutical Journal," vol. ix., 5s. 6d. "Balfour's Botany," 3s. 6d. Charles J. Kirkman, Wimbledon, S.W.

Six stone-coloured Infusion Pots, new, cost 6s. each; hold 6 pints up to strainer. Will take 21s., or 4s. separately. Cripps, Chemist, Hammersmith, W.

One Halse's Galvanic Machine, complete, mahogany box, 12 cells; cost ten guineas one year ago; carriage free for £5 5s. Glanvill, Hyde-road, Manchester.

"Pharmaceutical Journal," unbound, from July 2nd, 1870, to December 28th, 1872. An offer wanted. Address, J. N., 6, Anglesea-terrace, Bevois Hill, Southampton.

For Sale, several Flat Mahogany Cases; Pyramid Stand; Homœopathic Cases, &c. Stamped envelope for reply. W. Parker, Chemist, Manchester-road, Bradford, Yorks.

Offers wanted for "Pharmaceutical Journals," 1866—1872, inclusive; unbound; complete; in good condition. Holt, 9, Lamb-street, Stockport-road, Ardwick, Manchester.

Massive Iron Tincture Press, with circular screw action, suitable for the wholesale trade. Cost £7 15s. Lowest price £4. Apply William Hayward, Chemist, Manchester.

Steam Copper Still; Small Printing Press; prints bills, cards, bill-heads, &c.: three Jack Pumps, and lead piping, complete. Apply Wilkinson & Co., Baker's-hill, Sheffield.

Street Lamp, 20s.; Pill Machine, 7s. 6d.; Counter Scales, 5s.; Cigar Show Case, 5s.; Surplus Patents; Students' Books. Send for detailed particulars. Joseph Young, Leicester.

Chemists' Drawers and Shelving; several Glass Cases; Specie Jar; Scales and Weights; about 150 Drug Bottles; Outside Mortar, &c., &c. 87, Old Chester-road, Tranmere.

Squire's "Companion," 8th edition (new), 7s. 6d.; Barber's "Pocket Pharmacopœia," 3s., for 2s.; "Latin Grammar," 1s. 6d., for 10d., post free. J. Jupp, Blindley Heath, East Grinstead.

Kay-Shuttleworth's "Chemistry," 2s. 9d.; "Eton Latin Grammar," 1s. 3d.; "Henry's Latin Book," 1s. 9d.; Cæsar, cost 5s. 6d., (cheap) 2s. 9d. Address, Lea, Steers, Chemist, Maidstone.

Tincture Press, holds ten pints, mounted on wood stand, 22s.; also Displacement Apparatus and Two Percolators, as Fig. 1 and 2, Maw's Catalogue. Offers wanted. H. Chapman, Clevedon.

Muspratt's "Chemistry," complete, two vols., 42s., well bound. Offers wanted. "Chemist and Druggist," 1865, 1866. 1868, 1869, 1870; "Pharmaceutical Journal," 1870, 1871, 1872. Lea, Folkestone.

Three Glass Cases—one Maw's (Fig. 39); another wider, three doors; another sloping, back opens. Good condition—cheap. Particulars on application to R. T. Brammall, chemist, Stockport.

Electro Galvanic Machine in Mahogany Box; two sets Platinum and Zinc Plates; also several pieces Carbon and Zinc; Porous Pot. Cost £3 10s.; price 30s. W. F. Caunt, Buckley Mold.

Kelly's "New Post Office Directory of Chemists and Druggists, 1872." Published at 12s. 6d.; for 8s. 6d. Also Scoresby-Jackson's "Materia Medica," with Supplement. Almost new. Cost 14s.; for 8s. 6d., or offers. 43/611.

Thornton's Temple of Flora, containing a great number of fine engravings of trees, plants, and flowers, beautifully coloured; numerous fine portraits, by Bartolozzi, Woolworth, Earlom, and Ward, 5 vols.; published at above £50. Offer wanted. Hasselby, St. Leonards.

Erichsen's "Surgery," 1853 edition; in perfect order: cost 25s., and will be sold for 7s. A carefully selected Materia Medica Collection. The specimens (about 130) enclosed in neat card-board boxes, and labelled. Offers wanted. 60/411.

Six cwt. Pure Silica (powder). Will send 14lb. for 2s. from Birmingham. Beam and Scales to weigh a ton, 30s., or offers. Spring Sugar-chopper, 5s. Strong Iron Mortar, 1½ gallon, 7s. 6d. Corking Machine, 5s. Mason, chemist, Bromsgrove.

Local Anæsthetic Apparatus, Teeth extracting, &c., single and double jets, foot bellows, 20s., cost 34s. new; good strong Bicycle, 36-in. wheel, £3, cost £8 new; Two good Photo Lenses, &c., cheap. Pratt, Chemist and Dentist, Manchester.

A quantity of Myers' Royal Cattle Food, in packets, very slightly soiled; and about 28 lbs. ditto loose. Six dozen really good Trusses, all sizes, slightly soiled. No offer refused; owner having no use for them. B. N. Cooper, Chemist, Stockport.

For sale, about 56 lbs. good seconds Turkey Opium, price 23s. per lb., surplus stock, makes excellent tincture, is very cheap; also, about 18 ozs. Morphiæ Acetas, price 13s. 6d. per oz., bought from the best drug houses. Address, James Watson, Rose Corner, Norwich.

Five 2-gallon, and One 3-gallon pear-shaped Carboys, Cut-glass Stoppers. Fourteen 1-gallon Store Bottles, Labelled with Caps. Variety of Drugs, Patent Medicines, Oils, Leads, Colours, Varnishes, Bottles, &c. Stamp for List. L.R., 309, New North Road, Islington, London, N.

Four Specie Jars, with glass covers, labelled with (two) Magnesia, Hartshorn, and Rhubarb; total height, 2 feet 3 inches. Price 25s. each, or offers. Also three Pear-shaped Globes, with magnificently-cut stoppers, height, 2 feet 5 inches; two ditto, 2 feet 2 inches. Price 15s. each, or offers. R. W. Duck, Whitby.

Offers wanted for 4½ doz. Goulding's 1s. Flower-plant Food; 7 cwt. Myer's Farinaceous Cattle Food, 21s.; 3 doz. 20 oz. and 2 doz. 10 oz. Castor Oil; 30 doz. 6d. and 12 doz. 4d. Hair Oil; 15 doz. 6d. Sauce, unlabelled; 6 quart Tin Still with condenser, quite new. Address, Borthwick, Middlebie, Ecclefichan.

Gray's "Supplement," 8s. Hooper's "Physicians' Vade Mecum," 5th edition, 5s. Dawson on "Spermatorrhœa," 1s. 2d. Southall's "Cabinet Materia Medica," 30s., for £1. Milton's Curative Appliance for Spermatorrhœa, 4s. 12 pairs Clendon's Forceps in Morocco Case, cost £3. "Chemicus," 12, Tonsley-hill, Wandsworth, S.W.

"Pharmaceutical Journal," 26 vols., £2; "Cornhill Magazine," 17 vols., 22s. 6d.; Cassell's "Shakespeare," 35s.; "Educator," 16s.; "England," 35s., 45s., and 50s.; Knight's "England," £4, original edition, well-bound; Mahogany Portable Dispensing Scales, 20s. (cheap); and other sets for general counter use, 45s., cost £4. A bargain. At J. Richard's, 30, Lower King-street, Manchester.

Liston's "Practical Surgery," Brown's "Diseases of Women," Fourteen Braithwaite's "Retrospect," Brodie "On the Joints," Brodie's "Urinary Organs," Ashton's "Rectum Diseases," Two Elliotson's "Lectures," Diday's "Infantile Syphilis," Kramer's "Ear Diseases," Three Casper's "Forensic Medicine," *Lancet*, 1844, bound, Bright's "Abdominal Tumours," Hargrave's "Operative Surgery," 4 lb. Aleppo Scammony, 6 doz. Leath and Ross Neuraline. Cash or exchange. Fisher, West Vale, Halifax.

WANTED.

Hooper's Dictionary. Joce, Bideford.

Label Drawers. W. A. Wood, Hunslet.

Attfield's "Chemistry." Chambers, Haddenham.

Second-hand Pereira's Materia Medica. 43/611.

Four 4-gallon Show Carboys. B. Waddington, Thornton near Bradford.

A Nest of Small Drawers, about 5 feet long (deal or mahogany). 21/611.

Attfield's "Chemistry," 4th edition. Address W., 24, Sloane-street, London, S.W.

Six Plate-glass Shelves, about 2 feet 10 inches long. Also two Show Jars. 6/611.

Materia Medica Cabinet, cheap; good condition. T. Hambridge, Eynsham, Oxon.

Last Pharmacopœia of Veterinary College. Price to J. H. D. Jenkinson, chemist, Sheffield.

Counter Desk with Case at front. Particulars and price to Lockwood, chemist, Sheffield.

One or two good Benzoline Cisterns, screw top, about 100 gallons. Thornley, Stow-on-the-Wold.

Dried Specimens Hyoscyamus, Stramonium, &c., &c.; any quantity. Address W. Higginson, Newferry, Birkenhead.

Two No. 8, 9, or 10 (Maw's Catalogue) Fig. A Show Jars; Fig. 2 Prescription Desk; Fig. 8 Maw's Mahogany Case. 14/611.

Good Outside Lamp of any kind, but pillar preferred; Suppository Mould; Dental Instruments; Apparatus and Show Tablets. Cole, Stoke Newington.

Mahogany Glass Case, about 4 ft. 6 in. long, by about 2 ft. 4 in. (dispensing department), in good condition. Send particulars. R. W. Duck, Whitby.

Tools, lathe, &c., for commencing Mechanical Dentistry, also Forceps, and a good work on Mechanical Dentistry. State lowest price and full particulars to Dodridge, Balham, Surrey.

Large compo Pestle and Mortar, set of Tooth Instruments, Beasley's "Druggists' Receipt Book," late edition, 4 dozen 4 oz. or 5 oz. Stoppered Bottles, 5 inches high, labelled. H. R., 29, Mill-street, Kidderminster.

A Good Second-hand No. 1 Soda-water Machine, by any known good maker—either to purchase or exchange for a smaller one. Apply, stating price, to R. M. Mills and Co., soda-water manufacturers, Bourne.

Apparatus of various kinds, Pneumatic, Electrical, and Chemical, including good balance, must be by first class makers and cheap. Also old L. E. and D. Pharmacopœias. State full particulars and lowest prices. 39/611.

A Water Cushion or Mattress in perfect condition, a Suppository Mould, Watts's "Dictionary of Chemistry," M'Culloch's "Dictionary of Commerce," *Chemical News*, a week after publication. State price. Whitfield, Scarborough.

The Publisher of the Chemist and Druggist wants the following numbers, clean and complete:—February, May, July, August, October, November, 1870, and January, August, September, 1871. Any person willing to supply these is requested to communicate.

"GODFREY AGAIN."

An inquest was held on Dec. 6th at Wold Curr, in Yorkshire, on the body of a baby aged four weeks. The child had died in Hull on the 17th instant, had been buried, but had since been exhumed. The mother, Jane Stroutt, wife of a fisherman, said that on the Saturday she went to the shop of a chemist (believed to be the shop of Mr. Loten, 31, Mytongate) to get some of Godfrey's cordial, as the child seemed to have stomach-ache. She got a pennyworth in a cup. No question was asked her, the cup was not labelled, and no directions were given her as to the dose. She gave the child very nearly two teaspoonfuls of the cordial, without the admixture of water or any thing. Did not notice any change in the child. At eleven o'clock it fell asleep, and she put it to bed. Next morning she thought it seemed ill, and took it to Mr. Daniel Gibson surgeon, who resided in Waverly-street. She told Mr.

bson what she had given the child, and he told her to ve it some castor oil, and said he thought it would soon be l right. She administered two teaspoonfuls of castor oil ı arriving at home, in Dagger-lane, and tho child then ap- ared all right. It soon, however, turned bad again, and sho ok it to Mr. Gibson's, and ho told her it was dead. It was ive when she set off. W. L. Loten, chemist and druggist, ., Mytongate, was then examined. He said he recognised rs. Stroutt, but did not remember selling her the cordial. lways waited on all the customers himself. Sold about alf a gallon of Godfrey's cordial per week, and tho greater ortion went out in cups, which he did not label. Sold one nce for a penny. Made the cordial himself of 4lbs. treacle,) drops oil of sassafras, 2oz. sweet nitre, and 2lbs. boiling ater. That was not the true Godfrey's cordial, which was a tent medicine. Every druggist had a formula of his own r what he called Godfrey's cordial. His cordial never con- ined any opiate or any poison whatever. The cordial roduced by the police had not been purchased at his shopt e had given a sample of his cordial to Superintenden. llerker. Superintendent Ellerker produced the sample, hich he said he received from Mr. Loten at his shop; also ho cup and its contents, and the spoon, which he received f Inspector Adkins of the Hull Police. Mr. Daniel Gibson aid, upon making a *post-mortem* examination he found the ungs and heart healthy; but the pericardium was full of luid, from recent inflamation. The liver was enlarged. The somach and bowels were quite empty, and there was no race of poison. Any one thus affected with pericardiist uight die any moment. Believed the disease was the result f cold. The sample of cordial which Mr. Loten said was his ontained nothing injurious, and two teaspoonfuls of that vould not make a child go to sleep. The sample received rom the Hull police appeared to be Godfrey of the usual ind—it contained opium. Two teaspoonfulls would be a very arge dose for a child. He was satisfied pericarditis had been the cause of death. The Coroner, in summing up, strongly condemned what he called the reprehensiblo practice of women administering Godfrey's cordial to their children to make them go to sleep. Godfrey's cordial was only another word for poison. However, the evidence of the surgeon seemed to decide this case, it being his opinion that death resulted from natura causes. The jury gave a verdict accordingly, and expressed the opinion that this was a proper case for inquiry.

TRADE REPORT.

REVIEW OF 1872.

WE are now in a position to take a retrospective glance at the past year, with a view to defining the more notable movements in such market staples as we are immediately interested in. It is satisfactory to note, upon referring to past reports, that many of our calculations have been borne out strikingly, and if acted upon, cannot have failed to conduce to the business prosperity of our readers. Probably it is pardonable at this convenient standpoint to advert to the character of our monthly reports. It is, and always has been, our one aim to make them practically serviceable, and as far as is possible the accurate indicators of future movements, as well as the faithful chroniclers of past transactions. To this end our efforts will be directed during the year, and we can but trust that the information placed at the disposal of our readers from month to month will be found serviceable and lead to tangible results.

The Drug market has been well supplied throughout the year, and many staples have consistently maintained a strong position, whilst others have been subjected to much speculative attention, and have seen many and notable changes in value.

Camphor during the first six months of the year remained firm at 82s. 6d. to 90s., and was the medium of considerable business, and that of a *bonâ fide* character. Indeed, speculation has interfered with this article much less than in previous years. From June slackness of demand resulted in a decline to 75s., and even as low as 72s. 6d. was accepted. In December the quotation was 75s. to 77s. 6d., and at present the position is much improved, and 82s. 6d. required. Stocks are by no means low, but there is no great quantity coming forward.

Cardamoms opened at 8s. to 8s. 9d. for Malabars, and in December they could be bought for 6s. 6d. With but few variations the decline has been progressive, and has resulted from the large supplies available. Imports have been unprecedently large, viz., 2,106 packages against 1,139 packages in 1871, and 548 in 1870. The present stock is 808 packages against 270 same time last year. As a contrast the stock in January, 1871, may be noted. It then amounted to about 50 cases only, and the price ruling was 14s.

Opium was obtainable in January, 1872, at 17s. to 19s., and for good quality 28s. is now wanted. The first movement upward took place in March, when there were disquieting rumours of damage done to the growing crop. These were not without foundation, and in June we wrote, "We fear that our information comes from too reliable sources that the coming crop will only be about three-fourths of last year's." The value in November was 23s. 6d. to 26s. 6d., and we then expressed our belief that 30s. would soon be wanted for Smyrna. Last month the diminution in the export demand eased matters a trifle, but at present the position is strong enough to warrant the prediction we ventured. The stock on January 1 was 886 cases, against 1,251 corresponding time last year.

Vanilloes have been fetching extraordinary prices, and in March we intimated that the crop was not nearly up to the average, although of superior quality. Mexicans have fetched as much as 100s. per lb., but the market has been chiefly supplied with Mauritius, and these are still selling readily at 50s. to 75s., according to length.

BARKS.—Cinchonas have met, if anything, an accelerated demand, and prices throughout the year have been well maintained. The bark grown under Government supervision in India has been finding its way into the market, and has met very fair attention. The average price it has fetched may be set down at about 1s. 6d. per lb., and this figure cannot be complained of, as many parcels have consisted of small quills only.

Cundurango, which at the commencement of the year was held at 5s. per lb., and later on sold at 3s., declined in May to 1s., and in October was allowed to go at ½d., the present value being about *nil*. From its first introduction to the market at the fabulous price of 40s. we ridiculed its pretensions, and in January last we commented upon the retirement of a parcel at auction at 5s. per lb. as follows:—"We can only account for the trash being offered and bought in at such an absurd price by assuming that credulous holders are unwilling to abandon the idea that Cundurango will yet prove a brilliant success."

GUMS.—Assafœtida has ruled very high, and the supply has been, and still is, inadequate to the demand. Gamboge was an article of speculation during a short period, commencing the year at £13 to £14; about the end of February there was a strong demand, partly for immediate use, and as high as £20 was paid. This was of short duration, however, for some supply was placed on the market, and prices gradually declined in June to £13 to £16. At these figures good business was done during the subsequent months to October, when the market became dull, but finally closed with fair demand at £11 to £15. Large parcels of Varnish Gums have been put forward, and met no commensurate demand, the most notable decline being in Kowrie and Manilla Copal.

ESSENTIAL OILS.—Aniseed has been a favourite medium of speculative dealing, and has scarcely supported same value two weeks together. It opened in January at 12s., but in April, owing to presence of large stock, touched 9s. 9d. A speculative demand subsequently moved it up to 11s., but again the price declined with large arrivals to 9s.

In August some bear sales were made for future delivery, but the rest of the holders met this demonstration by a counter movement, and forced the oil up to 11s. Subsequently 13s. was paid, but not for long, and, in October, holders evinced an eagerness to let go stocks, and the price declined to 9s., being the lowest point of year, and about the present value. Cassia, at the commencement, commanded 5s. 9d., in July the price moved up to 6s. 3d., and, in October, to 7s. At this figure it is now obtainable, and there is but small likelihood of immediate reduction, the stock being well held. Citronella has fluctuated considerably, and Lemongrass, which in February sold at 3d., is now worth 5d. per oz. Lemon and Bergamot have fetched stiff prices throughout the year.

CHEMICALS.—The chemical trade of the past year has, on the whole, shown an encouraging development, although the last half has not borne such good results as the first six months. It is computed that since 1853 the trade, taken in its entirety, has doubled itself twice, and that since 1863 the manufacture of certain products, such as Caustic Soda, Bleaching Powder, and Fertilizers, has advanced at more than double even this rate.

Acids.—Citric at the commencement of the year was obtainable at 2s. 10d., and has moved forward till 4s. 5d. is the present value. The scarcity of Lemon Juice is the main reason for this high figure, but scarcely the only one. There can be no hope of a considerable fall, but a slight drop may occur at any moment. For the first eight months Oxalic kept at a firm figure, but increased production then made itself felt, and the price came down to 10½d., at which it remains. Tartaric has met an active demand throughout, and at the moment is firm at 1s. 8d. The manufacture of Sulphuric Acid has greatly extended, and whereas in 1867 the total production was estimated at 375,000 tons, it is supposed, from the quantity of pyrites burned, that the last year's production has been double that quantity. Soda Ash, Caustic Soda, Bicarbonate Soda, and Crystals Soda, have maintained an advance of 20 to 25 per cent. from the commencement to the close of 1872. Bleaching Powder opened at 13s. 9d., and with a good demand advanced gradually to 17s. in May; but shortly afterwards receded to its original price, and, with slight variation, closes at 12s. 9d. per cwt. landed. Messrs. Berger, Spence, and Co., compute the actual manufacture of Bleaching Powder in Great Britain to reach about 90,000 tons per annum (50,000 tons being made according to Weldon's process). The consumption of Chlorate of Potash has increased in a very marked manner, and considerable quantities of French make have found their way into the market. The lowest price of the year was in February and August, viz.—1s. 5½d., the highest, 1s. 11d. during April and May, fluctuations between being constant. The present value is about 1s. 6d.

Quinines have maintained a firm position and high prices throughout. The stock of Pelletier's is not large, and the closing quotation for this brand is 7s. 10d., and for Howards 8s.

Nitrate of Soda.—The use of this article as a fertilizer has greatly increased, and the imports from Peru have been fully equal to the demand. Indeed, during the year, the imports from that country show an average increase of 4,000 tons per annum over the past five years, making in all nearly as much as the whole production during the first twenty-five years of the trade, which commenced in 1850. The price opened in January at 16s. 9d., and closes at 16s., with a strong market and every appearance of advance, in view of the action of the Peruvian Government, which proposes to impose an export duty on the product.

Iodine.—In January, 1872, the combination of producers met and fixed the price at 2s. 1d., and this has been the ruling quotation for the year, although some outside parcels have from time to time been let go under that figure. Early this month the "Iodine Conclave" again assembled, but there seems to have been some disagreement in the camp, and we understand that one manufacturer clenched matters by declaring his intention to let go at 9d. On the 3rd inst., this price was announced on 'Change as the value, and since then immense business has been done at the figure. Perhaps our readers would do well to take advantage of the low rate ruling, as it is quite on the cards that a combination will again be effected. In the meantime Iodide of Potassium has come down with a vengeance, and is now selling at 12s. per lb., against 25s., the figure required last month.

Mercury, which at the beginning of the year was disposed of at about £10 to £10 10s. per bottle, advanced in April to £11, and we then advised our readers as follows:—"We hear that Messrs. Rothschild, who hold absolute sway of the market, will probably 'apply the screw' still further, so our readers will do well to *send in their orders for mercurials at once.*" We can only hope that the hint was taken, for quicksilver and its preparations advanced continuously, and in July the metal reached £13. Since then £12 10s. to £12 15s. has been the ruling quotation, and there seems a probability of maintenance of high rates.

OILS.—Linseed during the first five months of the year ruled steadily at £32 15s. to £33 10s. per ton, but prices began to stiffen in June, and in July as much as £38 10s. was paid. This notable advance resulted from diminished production, in consequence of falling off in the demand for Linseed Cake, seed at the same time maintaining its price. In September the market receded to £36, and to £33 5s. in November; present quotation is £34 to £34 5s. The estimated production in the United Kingdom for the year may be put down as 67,000 tons against 69,000 tons in 1871. Rape.—For the first few months brown oil maintained a steady aspect at about £42 per ton, but in April £37 was the selling quotation, and business was effected at this price up to £38 until the middle of September. A great speculative *coup* was then projected, and an attempt made to buy up the entire manufacture of three of the principal crushers. Prices immediately bounded up, and the three makes became the medium of very large transactions, fluctuations in prices sometimes amounting to £4 per ton in a day. In November the highest point, £45 10s. was reached, and a decline has since resulted until present value is about £39 to £39 10s. As a result of the speculation referred to, foreign oil in large quantities was attracted, and could always be bought at say £1 per ton under the special makes. In January, 1872, the stock at docks and wharves was 246 tons only; but at present time about 3,000 tons are in stock there, besides much in private cisterns. Cocoanut.—The imports during the year have been unprecedentedly large, and the consumption shows considerable increase, and this despite the production here of substitute oils made from "copra," "palm-nut kernel," "palmetine," and other nuts. The value has steadily depreciated from the causes indicated month by month, and fine Cochin, which in January was quoted at £50, is now obtainable at £39 down to £36 and £37 for medium and ordinary qualities. Ceylon has not fluctuated so markedly; price opened at £38, and it can now be bought at £34 10s. Palm has seen but few changes of import, and has been deterred from attaining an elevated position by the low prices that have ruled for inferior Australian tallow.

FISH OILS have been tolerably quiet throughout the year, and sperm alone has exhibited any noticeable movement in value. The price was £92 per tun in January; it gradually advanced to £99 10s. in March, and receded to £84 10s. in August. The tendency has since been upwards, £90 being about present value.

Turpentine maintained a firm aspect during the first six months of the year, and in May commanded 60s. About July large arrivals came forward, and the market was weakened by the pressure of rejected parcels. The price came down with a run to 32s., but again improved as undesirable lots were cleared off. Present quotation is 44s. 6d., and for January-February deliveries 44s. has been paid. The stock is not large, and as the amount on the way is not very great, there seems a probability of rates further stiffening. The import into London of American spirits for the year footed up to 5,147 tons against 5,375 in 1871; and the stock on January 1 was 968 tons only against 5,375 tons at the corresponding time in previous year.

Refined Coal Oil.—The manufacture has, during the past year, attained an excellence not before arrived at, both as regards colour and smell; but the production is estimated at 25 per cent. below that of 1871. The high price of coal and labour is chargeable with this falling off, as many crude works were suspended on account of such considerations. Since July the price has moved up conjointly with that of Petroleum in the United States, and as the new year opens with small stocks, the maintenance of present prices seems probable.

Monthly Price Current.

prices quoted in the following list are those actually obtained in Mincing-lane for articles sold in bulk. Our Retail Subscribers must ot expect to purchase at these market prices, but they may draw rom them useful conclusions respecting the prices at which articles re offered by the Wholesale Firms.

EMICALS.	1872.			1871.		
IDS—	s. d.		s. d.	s. d.		s. d.
Acetic ....per lb.	0 4¼	to	0 0	0 4	to	0 0
Citric ....per lb.	4 5½	..	4 6	2 10	..	0 0
Hydrochlor. ....per cwt	4 0	..	7 0	4 0	..	7 0
Nitric ....per lb.	0 5	..	0 5½	0 5	..	0 5½
Oxalic .... ,,	0 9½	..	0 10	1 1½	..	1 2
Sulphuric ...... ,,	0 0¾	..	0 1	0 0¾	..	0 1
Tartaric crystal .. ,,	1 8	..	0 0	1 7	..	0 0
powdered ,,	1 8	..	1 8	1 7	..	0 0
TIMONY ore......per ton	360 0	..	400 0	240 0	..	0 0
crude ..per cwt	40 0	..	42 0	34 0	..	36 0
regulus.. ,,	0 0	..	0 0	47 0	..	48 0
star .... ,,	65 0	..	67 0	50 0	..	51 0
SENIC, lump...... ,,	18 6	..	19 0	15 6	..	16 0
powder.... ,,	8 9	..	9 0	6 9	..	7 3
IMSTONE, rough ..per ton	125 0	..	147 0	140 0	..	150 0
roll ....per cwt	10 0	..	10 10	10 0	..	10 10
flour.... ,,	11 0	..	12 0	12 0	..	13 0
DINE, dry ....per oz.	0 9	..	0 0	2 3	..	0 0
ORY BLACK, dry..per cwt.	8 6	..	0 0	0 0	..	0 0
AGNESIA, calcined..per lb.	1 6	..	0 0	1 1	..	0 0
ERCURY...... .. per bottle	255 0	..	0 0	200 0	..	210 0
INIUM, red ......per cwt.	21 3	..	21 6	21 3	..	0 0
orange .... ,,	32 6	..	0 0	31 6	..	32 0
RECIPITATE, red ....per lb.	4 3	..	0 0	3 5	..	0 0
white .. ,,	4 2	..	0 0	3 4	..	0 0
RUSSIAN BLUE ...... ,,	0 0	..	0 0	0 0	..	0 0
ALTS—						
Alum ....per ton	170 0	..	170 0	160 0	..	165 0
powder .... ,,	180 0	..	180 0	180 0	..	0 0
Ammonia:						
Carbonate ......per lb.	0 7	..	0 7¼	0 7	..	0 7¼
Hydrochlorate, crude, white........ per ton	640 0	..	0 0	560 0	..	600 0
British (*see* Sal Ammoniac)						
Sulphate ......per ton	400 0	..	410 0	460 0	..	470 0
Argol, Cape ......per cwt	75 0	..	90 0	65 0	..	90 0
France .... ,,	0 0	..	0 0	0 0	..	0 0
Oporto, red ,,	32 0	..	33 0	35 0	..	37 6
Sicily .... ,,	67 0	..	70 0	50 0	..	55 0
Naples, white ,,	0 0	..	0 0	0 0	..	0 0
Florence, white	0 0	..	0 0	0 0	..	0 0
,, red ,,	0 0	..	0 0	0 0	..	0 0
Ashes (*see* Potash and Soda)						
Bleaching powd..per cwt.	12 9	..	13 0	13 6	..	13 9
Borax, crude .... ,,	50 0	..	76 0	47 6	..	65 0
(Tincal) .. ,,	47 0	..	65 0	45 0	..	60 0
British refnd. ,,	105 0	..	0 0	100 0	..	0 0
Calomel ....per lb.	3 10	..	0 0	3 3	..	0 0
Copper:						
Sulphate ......per cwt.	31 0	..	31 6	30 0	..	34 0
Copperas, green ..per ton	60 0	.	62 6	62 6	..	65 0
CorrosiveSublimate..p.lb.	3 3	..	0 0	2 7	..	0 0
Cr. Tartar, French, p. cwt.	105 0	..	107 6	100 0	..	0 0
Venetian grey ,,	0 0	..	0 0	100 0	..	0 0
brown ,,	97 6	..	102 6	90 0	..	95 0
Epsom Salts ....per cwt.	5 9	..	6 3	6 0	..	7 0
Glauber Salts .... ,,	7 6	..	0 0	4 6	..	6 0
Lime:						
Acetate, white, per cwt.	14 0	..	22 6	12 6	..	23 0
Magnesia: Carbonate ,,	42 6	..	45 0	42 6	..	0 0
Potash:						
Bichromate ....per lb.	0 8½	..	0 0	0 10	..	0 0
Carbonate:						
Potashes, Canada, 1st sort ......per cwt.	39 0	..	0 0	45 6	..	46 0
Pearlashes, Canada, 1st sort ......per cwt.	50 0	..	0 0	49 0	..	49 6
Chlorate ....per lb.	1 7½	..	1 8	1 6	..	0 0
Prussiate ...... per lb.	1 5½	..	1 6	1 9½	..	0 0
red .... ,,	3 1	..	0 0	3 0	..	3 2
Tartrate (*see* Argol and Cream of Tartar)						
Potassium:						
Chloride ......per cwt.	9 9	..	10 0	10 6	..	11 0
Iodide.......... per lb.	12 0	..	0 0	35 0	..	0 0
Quinine:						
Sulphate, British, in bottles ...... per oz.	8 0	..	0 0	7 9	..	0 0
Sulphate, French ,,	7 10	..	0 0	7 8	.	0 0
Sal Acetos ....per lb.	1 2	..	0 0	1 4	..	0 0
Sal Ammoniac, Brit. cwt.	48 0	..	49 0	47 0	..	48 0
Saltpetre:						
Bengal, 6 per cent or under ......per cwt.	29 6	..	30 0	27 0	..	29 6
Bengal, over 6 per cent. per cwt.	28 6	..	29 3	28 0	..	28 9
Madras........ ,,	0 0	..	0 0	0 0	..	0 0
Bomb & Kurrachee p.ct.	0 0	..	0 0	0 0	..	0 0
European...... ,,	0 0	..	0 0	0 0	..	0 0
British, refined ,,	33 0	..	34 9	34 0	..	35 0
Soda: Bicarbonate, p.cwt.	17 3	..	17 6	14 9	..	15 0
Carbonate:						
Soda Ash....per deg.	0 3¼	..	0 0	0 2½	..	0 2¾
Soda Crystals per ton	135 0	..	137 6	122 6	..	0 0
Hyposulphite..per cwt	15 0	..	0 0	14 0	..	16 0

	1872.			1871.		
Soda:	s. d.		s. d.	s. d.		s. d.
Nitrate ....per cwt.	15 9	to	16 0	16 9	to	17 0
SUGAR OF LEAD, White, cwt.	41 0	..	0 0	40 0	..	0 0
Brown .... ,,	30 0	..	0 0	27 0	..	0 0
SULPHUR (*see* Brimstone						
VERDIGRIS .... per lb.	1 1½	..	1 2	1 0	..	1 2
VERMILION, English..per lb.	3 8	..	3 10	3 2	..	3 4
China.... ,,	3 7	..	4 0	3 6	..	0 0
DRUGS.						
ALOES, Hepatic....per cwt.	100 0	..	240 0	75 0	..	230 0
Socotrine .. ,,	160 0	..	320 0	130 0	..	300 0
Cape, good.. ,,	32 0	..	37 0	42 0	..	47 0
Inferior ,,	20 0	..	30 0	30 0	..	40 0
Barbadoes ,,	70 0	..	200 0	75 0	..	220 0
AMBERGRIS, grey........ oz.	26 0	..	32 6	26 0	..	29 0
BALSAM —						
Canada .... per lb.	1 9	..	1 10	1 6	..	0 0
Capivi .... ,,	2 1	..	2 3	1 11	..	1 11½
Peru .... ,,	9 1	..	9 2	9 1	..	9 2
Tolu .... ,,	1 9	..	1 11	2 2	..	2 3
BARKS—						
Canella alba ....per cwt.	15 0	..	25 0	15 0	..	25 0
Cascarilla........ ,,	24 0	..	37 0	20 0	..	37 0
Peru, crown & grey per lb.	1 0	..	2 8	1 6	..	3 1
Calisaya, flat ,,	2 10	..	4 0	3 2	..	3 4
quill	2 10	..	4 10	3 2	..	3 4
Carthagena ,,	0 10	..	1 10	0 10	..	1 8
Pitayo .... ,,	0 4	..	1 9	0 10	..	1 6
Red .... ,,	1 10	..	6 0	1 10	..	6 6
Bucha Leaves ...... ,,	0 2	..	1 0	0 4	..	1 0
CAMPHOR, China.. per cwt.	82 6	..	0 0	82 6	..	0 0
Japan ,,	0 0	..	0 0	0 0	..	0 0
Refin Eng. per lb.	1 2	..	0 0	1 3½	..	1 4
CANTHARIDES ...... ,,	6 0	..	6 7	7 9	..	0 0
CHAMOMILE FLOWERS p. cwt	40 0	..	80 0	45 0	..	70 0
CASTOREUM .... per lb.	6 0	..	20 0	3 0	..	30 0
DRAGON'S BLOOD, lp. p. cwt.	100 0	..	242 6	110 0	..	210 0
FRUITS AND SEEDS (*see also* Seeds *and* Spices)						
Anise, China Star pr cwt.	107 6	..	115 0	135 0	..	140 0
Spanish, &c. ,,	20 0	..	38 0	45 0	..	50 0
Beans, Tonquin .. per lb.	1 3	..	1 8	1 0	..	1 8
Cardamoms, Malabar good ,,	4 2	..	6 0	7 9	..	8 4
inferior ,,	2 6	..	3 9	7 6	..	7 9
Madras ,,	2 0	..	4 6	3 6	..	7 6
Ceylon ,,	3 6	..	4 0	3 0	..	3 2
Cassia Fistula.. per cwt.	12 0	..	22 0	12 0	..	30 0
Castor Seeds .. ,,	5 0	..	10 0	10 0	..	12 0
Cocculus Indicus ,,	12 0	..	14 0	19 0	..	0 0
Colocynth, apple.. per lb.	0 3½	..	0 7	0 3	..	0 6
Croton Seeds .. per cwt.	55 0	..	60 0	72 6	..	75 0
Cubebs .... ,,	20 0	..	25 0	25 0	..	27 6
Cummin........ ,,	21 0	..	27 0	60 0	..	70 0
Dividivi .... ,,	11 5	..	16 0	12 0	..	15 0
Fenugreek...... ,,	10 0	..	16 0	11 0	..	21 0
Guinea Grains .. ,,	23 0	..	25 0	42 0	..	0 0
Juniper Berries ,,	10 0	..	10 6	11 6	..	12 6
Myrobalans .... ,,	9 0	..	14 0	12 0	..	17 6
Nux Vomica.... ,,	9 9	..	15 0	11 0	..	13 6
Tamarinds, East India ,,	5 0	..	20 0	2 0	..	12 0
West India, new ,,	20 0	..	31 0	12 0	..	30 0
Vanilla, large .... per lb.	58 0	..	72 0	40 0	..	51 0
inferior ,,	26 0	..	56 0	20 0	..	37 0
Wormseed per cwt.	0 0	..	0 0	0 0	..	0 0
GINGER, Preserved, in bond (duty 1d. per lb.) per lb.	0 6½	..	0 9½	0 6½	..	0 11
GUMS (*see separate list*)						
HONEY, Chili .... per cwt.	36 0	..	41 0	50 0	..	60 0
Cuba .... ,,	0 0	..	0 0	35 0	..	50 0
Jamaica.. ,,	30 0	..	45 0	50 0	..	66 0
IPECACUANHA .... per lb.	3 4	..	3 7	4 7	..	4 9
ISINGLASS, Brazil.. ,,	2 6	..	4 6	2 6	..	4 4
Tongue sort ,,	3 4	..	5 2	3 3	..	5 1
East India ,,	1 0	..	4 5	1 5	..	3 10
West India ,,	4 0	..	4 5	3 10	..	4 1
Russ. long staple	8 0	..	12 6	6 0	..	9 6
,, leaf ,,	3 6	..	7 6	3 6	..	6 6
,, Simovia	2 6	..	4 6	2 0	..	3 6
JALAP, good ...... ,,	1 4	..	2 0	1 6	..	2 6
infer. & stems ,,	0 10	..	1 3	0 6	..	1 5
LEMON JUICE ... per degree	0 2¾	..	0 0	0 1	..	0 1¼
LIQUORICE, Spanish per cwt.	0 0	..	0 0	35 0	..	37 0
Italian ,,	0 0	..	0 0	40 0	..	60 0
MANNA, flaky .... per lb.	3 0	..	3 3	3 3	..	3 6
small...... ,,	1 2	..	1 8	2 0	..	0 0
MUSK, Pod .... per oz.	19 0	..	38 6	17 0	..	37 0
Grain ...... ,,	45 0	..	56 0	0 0	..	0 0
OILS (*see also separate List*)						
Almond, expressed per lb.	1 1	..	0 0	1 4	..	0 0
Castor, 1st pale .... ,,	0 0	..	0 0	0 5½	..	0 5¾
second .... ,,	0 5	..	0 5¼	0 5	..	0 4½
infer. & dark ,,	0 4½	..	0 4⅜	0 4¼	..	0 4¼
Bombay (in casks)	0 4¾	..	0 0	0 4¼	..	0 4½
Cod Liver ......per gall.	3 6	..	5 9	5 0	..	6 0
Croton............per oz.	0 3	..	0 4	0 3½	..	0 4½
Essential Oils:						
Almond ....per lb.	35 0	..	0 0	42 0	..	0 0
Anise-seed ...... per lb.	9 3	..	0 0	12 0	..	12 3
Bay ....per cwt.	0 0	..	0 0	65 0	..	70 0
Bergamot ......per lb.	8 6	..	16 0	8 0	..	15 0
Cajeput, (in bond) per oz.	0 0	..	0 0	0 0	..	0 0
Caraway ....per lb.	5 6	..	6 3	5 6	..	6 3
Cassia .... ,,	6 10	..	0 0	5 3	..	5 10
Cinnamon ......per oz.	1 0	..	7 0	0 10	..	3 1
Cinnamon-leaf.. ,,	0	..	0 5	0 2	..	0 4½

	1872.					1871.				
Essential Oils, *continued*:—	s.	d.		s.	d.	s.	d.		s.	d.
Citronella ......per oz.	0	0	to	0	2	0	2	to	0	2⅛
Clove ....per lb.	4	6	..	0	0	2	4	..	0	0
Juniper .... ,,	1	9	..	2	0	1	3	..	2	4
Lavender........ ,,	2	6	..	5	6	3	6	..	6	0
Lemon.......... ,,	10	0	..	17	0	5	0	..	15	0
Lemongrass ....per oz.	0	4⅜	..	0	5	0	2¾	..	0	2⅞
Neroli .... ,,	7	0	..	8	0	7	0	..	8	6
Nutmeg .... ,,	0	10	..	0	11	0	4½	..	0	10½
Orange..........per lb.	7	0	..	8	0	7	0	..	8	0
Otto of Roses....per oz.	15	0	..	28	0	12	0	..	21	0
Patchouli ...... ,,	4	0	..	0	0	4	0	..	0	0
Peppermint:										
American ....per lb.	13	3	..	14	0	13	6	..	14	6
English ...... ,,	26	0	..	28	0	30	0	..	33	0
Rosemary ...... ,,	1	11	..	0	0	1	9	..	2	0
Sassafras........ ,,	8	2	..	3	8	3	0	..	3	6
Spearmint ...... ,,	4	0	..	16	0	4	0	..	10	0
Thyme.......... ,,	1	10	..	1	11	1	10	..	2	0
Mace, expressed .. per oz.	0	1½	..	0	4	0	1½	..	0	3
Opium, Turkey ...... per lb.	21	0	..	24	0	17	0	..	19	0
inferior ...... ,,	12	0	..	20	0	11	0	..	16	0
Quassia (bitter wood) per ton	85	0	..	90	0	80	0	..	82	6
Rhubarb, China, good and fine ....per lb.	2	9	..	6	0	2	0	..	6	0
Good, mid. to ord. ,,	0	5	..	2	6	0	3½	..	1	10
Dutch trimmed ,,	9	0	..	9	6	0	0	..	0	0
Russian .... ,,	0	0	..	0	0	0	0	..	0	0
ROOTS—Calumba..per cwt.	24	0	..	27	0	24	0	..	26	0
China .... ,,	20	0	..	27	0	24	0	..	26	0
Galangal .... ,,	18	0	..	22	0	17	0	..	18	0
Gentian .... ,,	17	0	..	18	0	20	0	..	22	0
Hellebore ...... ,,	30	0	..	32	0	30	0	..	35	0
Orris............ ,,	30	0	..	36	0	65	0	..	75	0
Pellitory .... ,,	38	0	..	39	0	58	0	..	62	0
Pink..............per lb.	0	10	..	1	0	0	9	..	1	3
Rhatany.......... ,,	0	5	..	0	11	0	4	..	0	11
Seneka............ ,,	4	0	..	5	5	5	3	..	5	6
Snake .... ,,	1	1	..	1	2	1	5	..	1	6
Saffron, Spanish .. ,,	25	0	..	36	0	0	0	..	0	0
Salep ....per cwt.	170	0	..	180	0	170	0	..	200	0
Sarsaparilla, Lima per lb.	0	5¾	..	0	6	0	8	..	0	11
Para.............. ,,	1	3	..	0	0	1	0	..	1	3
Honduras .... ,,	1	2	..	1	9½	1	2	..	1	8
Jamaica .... ,,	1	6	..	2	6	1	7	..	2	11
Sassafras ....per cwt.	0	0	..	0	0	0	0	..	0	0
Scammony, Virgin ..per lb.	26	0	..	30	0	26	0	..	32	0
second & ordinary ,,	18	0	..	25	0	10	0	..	25	0
Senna, Bombay .... ,,	0	2	..	0	5	0	3	..	0	6
Tinnivelly .... ,,	0	8	..	1	0	0	3¼	..	1	4
Alexandria........ ,,	0	2½	..	1	0	0	3½	..	1	7
Spermaceti, refined.. ,,	1	6	..	0	0	1	6	..	1	7
American .... ,,	1	2	..	1	3	1	2	..	1	3
Squills .... ,,	0	1	..	0	2	0	1¼	..	0	1¾

GUMS.

	1872.					1871.				
	s.	d.		s.	d.	s.	d.		s.	d.
Ammoniaci drop ..per cwt.	100	0	..	160	0	80	0	..	150	0
lump .. ,,	80	0	..	180	0	55	0	..	75	0
Animi, fine washed ,,	280	0	..	330	0	280	0	..	335	0
bold scraped ,,	220	0	..	280	0	210	0	..	270	0
sorts ...... ,,	140	0	..	230	0	140	0	..	230	0
dark ...... ,,	90	0	..	130	0	85	0	..	130	0
Arabic, E. I., fine pale picked .. ,,	65	0	..	84	0	70	0	..	76	6
srts, gd. to fin ,,	60	0	.	60	0	57	0	..	69	0
garblings.. ,,	23	0	..	50	0	23	0	..	42	0
Turkey, pick. gd to fin. ,,	160	0	..	230	0	160	0	..	200	0
second & inf. ,,	85	0	..	150	0	85	0	..	155	0
in sorts .. ,,	0	0	..	0	0	65	0	..	80	0
Gedda.... ,,	30	0	..	42	0	38	0	..	44	0
Barbary, white .. ,,	50	0	..	55	0	0	0	..	0	0
brown .. ,,	35	0	..	42	0	45	0	..	47	0
Australian ...... ,,	22	0	..	45	0	25	0	..	45	0
Assafœtida, com. to gd ,,	42	0	..	105	0	30	0	..	100	0
Benjamin, 1st qual. ,,	180	0	..	400	0	180	0	..	500	0
2nd ,, ,,	135	0	..	200	0	150	0	..	210	0
3rd ,, ,,	65	0	..	85	0	50	0	..	85	0
Copal, Angola red ,,	137	6	..	140	0	130	0	..	137	6
Benguela .. ,,	110	0	..	115	0	100	0	..	112	6
Sierra Leone..per lb.	0	3½	..	0	10	0	3½	..	0	11
Manilla ....per cwt.	17	0	..	37	0	20	0	..	38	0
Dammar, pale .... ,,	55	0	..	60	0	55	0	..	0	0
Euphorbium ...... ,,	12	0	..	15	0	15	0	..	17	0
Galbanum .... ,,	0	0	..	0	0	200	0	..	260	0
Gamboge, pckd. pipe ,,	240	0	..	310	0	215	0	..	270	0
Guaiacum ....per lb.	0	8	..	2	6	0	9	..	2	10
Kino..............per cwt.	50	0	..	85	0	60	0	..	90	0
Kowrie, rough.... ,,	20	0	..	29	6	9	0	..	0	0
scraped .. ,,	30	0	..	37	6	0	0	..	0	0
Mastic, picked......per lb.	6	0	..	7	0	6	0	..	7	6
Myrrh, gd. & fine per cwt.	120	0	..	200	0	130	0	..	190	0
sorts......	78	0	..	115	0	90	0	..	120	0
Olibanum, p. sorts	75	0	..	80	0	76	0	..	80	0
amber & ylw.	67	0	..	74	0	67	0	..	75	0
garblings .... ,,	22	0	..	39	0	10	0	..	45	0
Senegal ....per cwt.	70	0	..	80	0	70	0	..	82	6
Sandarac .... ,,	50	0	..	98	0	55	0	..	105	0
Shellac, Orange.... ,,	177	6	..	190	0	175	0	..	185	0
Liver...... ,,	165	0	..	175	0	162	0	..	170	0
Thus.............. ,,	21	0	..	23	0	17	0	..	0	0
Tragacanth, leaf.. ,,	270	0	..	440	0	200	0	..	450	0
in sorts ,,	70	0	..	180	0	110	0	..	180	0

OILS.

	1872.					1871.				
	£	s.		£	s.	£	s.		£	s.
Seal pale..........per tun	£39	0	..	0	0	£36	10	..	37	0
yellow to tinged ,,	34	0	..	38	0	35	0	..	36	0
brown........ ,,	33	0	..	0	0	32	10	..	0	0
Oils, *continued*:—										
Cod................ per tun	38	10	to	0	0	34	10	to	0	0
Whale, South Sea, pale ,,	40	0	..	40	10	36	0	..	37	0
yellow ,,	38	0	..	0	0	34	0	..	35	0
brown ,,	33	0	..	34	0	32	0	..	0	0
East India, Fish ,,	27	10	..	28	0	28	0	..	28	10
Olive, Galipoli ...... ,,	46	0	..	46	10	53	0	..	54	0
Trieste ...... ,,	45	0	..	45	10	52	0	..	53	0
Levant ...... ,,	43	0	..	43	10	50	0	..	51	0
Mogador...... ,,	43	10	..	0	0	49	10	..	0	0
Spanish ...... ,,	44	0	..	44	10	52	0	..	52	10
Sicily .... ,,	44	0	..	52	0	52	0	..	0	0
Cocoanut, Cochin.. per ton	36	0	..	39	0	44	0	..	45	0
Ceylon .. ,,	34	10	..	0	0	37	0	..	0	0
Sydney ,,	30	0	..	35	0	32	0	..	38	0
Ground Nut and Gingelly:										
Bombay	0	0	..	0	0	0	0	..	0	0
Madras..................	35	10	..	30	0	42	0	..	0	0
Palm, fine	38	10	..	39	0	40	0	..	0	0
Linseed	33	15	..	34	0	33	0	..	0	0
Rapeseed, English, pale ..	41	10	..	43	10	44	0	..	44	15
brown........	40	0	..	43	10	42	15	..	43	0
Foreign pale....	42	0	..	42	10	46	0	..	47	0
brown........	39	10	..	40	0	0	0	..	0	0
Cottonseed	31	5	..	31	10	34	0	..	34	10
Lard......................	44	0	..	44	10	52	0	..	54	0
Tallow	32	0	..	0	0	35	0	..	0	0
Turpentine, American, cks.	45	0	..	0	0	54	6	..	0	0
Petroleum, Crude	0	0	..	0	0	0	0	..	0	0
	s.	d.		s.	d.	s.	d.		s.	d.
refined, per gall.	1	8¾	..	1	9	1	6	..	1	6¾
Spirit ,,	1	4	..	1	5	1	0	..	1	2

SEEDS.

	1872.					1871.				
	s.	d.		s.	d.	s.	d.		s.	d.
Canary ....per qr.	48	0	..	56	0	52	0	..	58	0
Caraway, English per cwt.	36	0	..	44	0	0	0	..	0	0
German, &c.....	29	0	..	36	0	34	0	..	36	0
Coriander	16	0	..	18	0	0	0	..	0	0
Hemp..............per qr.	40	0	..	44	0	40	0	..	44	0
Linseed, English per qr...	60	0	..	67	0	0	0	..	0	0
Black Sea & Azof	60	6	..	61	0	62	0	..	0	0
Calcutta ,,	64	3	..	64	6	62	6	..	63	0
Bombay ,,	65	0	..	66	0	64	0	..	0	0
St. Petrsbrg. ,,	60	6	..	61	0	60	0	..	0	0
Mustard, brown..per bshl.	13	0	..	16	0	0	0	..	0	0
white.. ,,	8	0	..	9	0	9	0	..	9	6
Poppy, East India per qr.	69	0	..	0	0	64	0	..	0	0

SPICES.

	1872.					1871.				
	s.	d.		s.	d.	s.	d.		s.	d.
Cassia Lignea ....per cwt.	85	0	..	95	0	111	0	..	122	0
Vera .... ,,	30	0	..	00	0	42	0	..	77	0
Buds .... ,,	120	0	..	125	0	130	0	..	140	0
Cinnamon, Ceylon,										
1st quality ....per lb.	2	9	..	3	11	2	8	..	3	9
2nd do. ...... ,,	2	3	..	3	6	2	0	..	3	6
3rd do. ...... ,,	1	10	..	3	3	1	10	..	3	0
Tellicherry ...... ,,	2	9	..	3	2	2	7	..	3	2
Cloves, Penang.... ,,	1	4	..	1	5	1	3	..	1	4
Amboyna........ ,,	0	6½	..	0	11½	0	4¼	..	0	10½
Zanzibar .... ,,	0	7¼	..	0	7	0	3½	..	0	3¼
Ginger, Jam., fine per cwt.	100	0	..	200	0	90	0	..	180	0
Ord. to good .. ,,	50	0	..	90	0	44	0	..	87	0
African.......... ,,	44	0	..	45	0	36	0	..	0	0
Bengal .... ,,	40	0	..	0	0	33	0	..	0	0
Malabar .... ,,	0	0	..	0	0	0	0	..	0	0
Cochin .... ,,	45	0	..	125	0	45	0	..	110	0
Pepper, Blk, Malabar, per lb.	0	6⅞	..	0	7⅛	0	7	..	0	7¼
Singapore........ ..	0	6¼	..	0	0	0	6½	..	0	0
White, Tellicherry ,,	0	0	..	0	0	0	0	..	0	0
Cayenne .... ,,	1	6	..	2	0	1	0	..	1	7½
Mace, 1st quality ..per lb.	3	9	..	4	5	4	4	..	4	9
2nd and inferior.. ,,	3	4	..	3	8	3	10	..	4	3
Nutmegs, 78 to 60 to lb.	3	2	..	4	2	3	5	..	4	4
90 to 80 ,,	2	11	..	3	1	3	4½	..	3	6
132 to 95 ,,	2	5	..	2	10	3	0	..	3	4

VARIOUS PRODUCTS.

	1872.					1871.				
	s.	d.		s.	d.	s.	d.		s.	d.
COCHINEAL—										
Honduras, black ..per lb.	2	5	..	3	4	2	8	..	3	6
,, silver .. ,,	2	5	..	2	8	2	7	..	2	10
,, pasty .. ,,		2	..	2	3	2	5	..	2	6
Mexican, black .... ,,	2	5	..	2	8	2	8	..	2	9
,, silver .... ,,	2	4	..	2	5	2	7	..	0	0
Teneriffe, black....	2	5	..	4	2	2	8	..	4	9
,, silver.... ,,	2	5	..	2	7	2	7	..	2	9
PUMICE STONE ..per ton	120	0	..	150	0	120	0	..	150	0
SOAP, Castile ....per cwt.	33	0	..	34	0	35	0	..	0	0
SPONGE, Turk. fin pkd pr lb.	12	0	..	16	0	12	0	..	16	0
Fair to good .. ,,	4	0	..	11	0	4	0	..	11	0
Ordinary...... ,,	1	0	..	3	6	1	0	..	3	6
Bahama.............. ..	0	6	..	2	6	0	6	..	2	6
TERRA JAPONICA—										
Gambier .. per cwt.	25	6	..	25	9	19	9	..	20	0
Free cubes ,,	29	0	..	30	0	22	0	..	23	6
Cutch ..... ,,	23	0	..	24	0	24	6	..	26	6
WOOD, Dye, Bar ..per ton	£4	0	..	£4/5/0		£3	15	..	£4	5
Brazil .... ,,	0	0	..	0	0	0	0	..	0	0
Braziletto .... ,,	0	0	..	0	0	0	0	..	0	0
Cam .... ,,	16	0	..	20	0	20	0	..	22	0
Fustic, Cuba...... ,,	0	0	..	0	0	9	0	..	10	5
Jamaica .... ,,	5	10	..	6	10	7	5	..	8	15
Savanilla........ ,,	0	0	..	0	0	0	0	..	0	0
Logwood, Campeachy ,,	0	0	..	0	0	9	10	..	10	0
Honduras ...... ,,	5	5	..	5	10	0	0	..	0	0
St. Domingo .... ,,	4	5	..	4	15	0	0	..	0	0
Jamaica .... ,,	4	2/6	..	4	10	5	1/6	..	5	10
Lima, first pile.... ,,	8	15	..	11	0	8	10	..	10	0
Red Sanders .... ,,	6	7/6	..	0	0	7	0	..	0	0